THE
STORY OF MAN

BY

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Illustrated by

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SIKH PUBLISHING HOUSE LTD.
AMRITSAR—NEW DELHI

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16407
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Price Rs. 2-8-0

Published Aug. 1954
by
Mubarak Singh
***for** Sikh Publishing House Ltd.,*
Court Road, AMRITSAR.

Printed at
The New India Press,
***K-Block**, Connaught Circus,*
NEW DELHI.

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DEDICATORY LETTER TO BALWANT GARGI

My Dear Balwant,

When you brought me a message from my Amritsar publisher to give him the book I promised last year, I said 'yes' before I knew what I was doing.

I realised later that I had made a very rash promise. For the book I had meant to write was vaguely entitled in my mind, "**THE STORY OF MAN**". And such a book cannot be written in a day. It would take years. There are so many gaps in our knowledge of the past and it is difficult even to guess what happened.

And yet when I thought over the matter, I felt that the book must be written, now or never. If it cannot be a long book, it must be a small one. Because, I do feel intensely that man stands at the cross-roads today. He has travelled on the long road of history. He has drifted on many highways. He has got lost in intricate byways. And he has emerged again and again on the roads of life. But now he has to choose his future direction. And it seems to me, as it is clear to most thinking people, that a great deal depends on the direction he takes.

There are signposts on the cross-roads which point towards the highways of life, which may lead us to rich fields of corn, and lovely grass-lands fed by waters from new dams, and beautiful cities, full of light and love and laughter. And there are signposts, which show the way to the roads of death, despair, hopelessness and chaos.

As there are crores of human beings in the world, they will choose their many different directions.

At one time, I used to think that the will to live would always make man choose the roads of life rather than of death. But I am not very sure of this today. Because, many clever people are taking men the wrong way. And the fears, doubts, especially prejudices, of men confuse them. Reason has little chance, unless we are careful.

How, then, are we to find the right direction? Are the signposts which lead to the roads of life real and true? Who is to show the way anyhow?

The answer to the first two questions can only be given if we answer the last question. And this answer is : Each man must find his own way.

'But how?' people ask, 'how can each man find his own way?'

I believe that each man can find his own way by stopping at the cross-roads and asking himself certain important questions : How has he come so far? What did his ancestors do to help him on his way? And whence comes the power in him which makes him want to go forward?

If some such questions are asked and answered, man may get the necessary light in himself to illumine the dark night in which he stands as he looks at the signposts.

For, he will see how wonderful are the things he and his ancestors have done to conquer their own weaknesses, ignorances and follies in history : How man made fire to warm himself, when there was nothing but ice in the world. How he controlled that fire, till he could switch it on in the electric bulb as and when he likes. How he built beautiful houses and temples when at first he only lived in mountain caves. How he learnt to grow food on the earth, in spite of the bad weather, the storms, the heat, the cold, and the lack of rain.

Truly man is a marvellous animal, greater than all the other animals, because he can think and feel and talk and control himself and his surroundings. He can grow flowers and make lovely garden bowers. He can carve stone and build the images of beautiful men and women, and even of the energies in him, which he calls gods. He can draw lines on rocks and on paper, lines which almost sing, and he can colour the pictures so as to fill other men's eyes with the greatest pleasure. He can catch the movements of birds and animals and trees and water, and express them rhythmically, with the gestures of his own body in hauntingly exquisite dances. He can master his own and other peoples' thoughts and feelings and put them down on paper in the most delicate shades and nuances of the heart and the spirit. He can make machines to lighten his own labour, and to fly in the air. He can speak on the radio, so that he can be heard thousands of miles away. He can make shadows on the screen talk and walk, as though they were real men and women. He can arrest the energy of the earth in the atomic pile. So that, today, he could, if he liked, use that energy to grow plentiful harvests all over the world in a few years and thus rid the world of poverty and disease. He can do anything if he wants to do it. Even destroy himself with this same miraculous energy which he has trapped in the atomic pile, if he uses it in the form of an atom bomb.

I shall try and put down briefly some of the stories of man's achievements in various spheres. From these we may derive the faith to go on towards the future. It is important in our country today that our children, specially, should know of the great things done by mankind. Because we have a long way to go towards making even those things which many other countries of the world have already made for their own benefit and for others. Also, we can, at this stage, learn to avoid the mistakes made by other men in making too many things which they don't know how to use, because they neglected to train their hearts, their minds and souls and bodies. Perhaps, we can avoid the dangers of too much "thinging" by a little 'thinking'.

As you are the person who asked me to write this little book, please permit me to dedicate it to you. In many ways you are like a child, because you will not take 'no' for an answer. And, I am told, I am very much of a child myself, because my curiosity is insatiable. Perhaps for these reasons, therefore, this book may recommend itself to children other than ourselves, among whom I always include every one from nine to ninety.

Bombay,
April—May, 1952.

Yours,
M. R. A.

CHAPTER FIRST

IN THE BEGINNING

1

Once upon a time, they say, there was nothing, or something we don't know about.

Who knows it? Who can say anything about it? How was it born? Whence came this creation. . . . ? Who knows from where it has arisen? So sang the poet of the *Rig-Veda* in the 'Hymn of Creation.'

And, unable to solve the riddle, he tried to guess at the process of the beginning of the universe.

Non-being there existed not, he said, nor being. There was no air, nor heaven which is beyond it. What motion was there? Where? By whom directed? Was water there and fathomless abysses?

And we do not know any more than did this old sage.

We can only go on asking questions and guessing the answers.

Perhaps, however, we are today able to make our guesses a little more accurately, because science can help us.

But all our wisdom dates from the time when man came upon earth, and began to think. Before man arrived nothing was known because there was no one to know things.

All the same let us guess what was there in the beginning, always keeping in mind that, apart from the fact of the solid earth, one guess is as good as another.

The bold sage of the *Rig-Veda* says : Darkness at first was covered by darkness. The Uni-

verse was indistinct and fluid. The empty space by the void was filled. Then, something, was by the force of heat engendered . .

2

Similarly, we guess that the earth on which we live was once a large ball of flaming matter. It was one planet among many others, poised in a kind of endless space. Legend has it that this ball was chipped off the sun, when the sun collided with some other planet, and that it was burning for a long time.

Then, through millions of years, the fire on its surface burnt itself out. And it was covered by a crust of hard rocks.

Rain came down in torrents on these rocks and carried

the ashes and dust to the valleys between the big mountains of the hot, smoky earth. At last the sun's heat came through the smoke and mist, and began to change the surface of our little planet.

3

During one moment in these billions of years, a wonderful thing happened: From the inert matter, a living cell was born. Perhaps it floated on the water between the high cliffs.

We do not know for how many millions of years this living cell, and others like it, drifted among the waters of the seas. But, it seems, that it was able to survive by lying at the bottom of the lakes or by living in the slime of the earth, where it grew into the form of plants.

Later, the living cells grew legs, with which it crawled in the mud of the seas. or became jelly-fish. Some other cells grew scales and swam in the waters. And these are the fishes.

As the living cells, which had become plants, could not all live at the bottom of the seas, they

rose to the marshes or made homes in the mud in the mountain valleys.

As they multiplied and became shrubs and trees, with lovely flowers on them, the living cells which had become insects and birds, pecked at them. Thus they carried the seeds from the trees to other parts of the earth. Thus arose millions of trees and many more shrubs and grasses.

Some of the fishes began to leave the waters and began to breathe the air. In order to do this they grew lungs, apart from their gills. These creatures are called amphibians, because they can live both in water and on land. Our hoarse friend, the frog, is one such amphibian.

But there are many others, some of whom learnt to live more and more on the land and less and less in the water. These were reptiles, which crawled among the grasses and on the soft earth, and grew legs and big bodies. Some of them, called by the long names, Ichthyosaurus and Megalosaurus and Brontosaurus, grew to be thirty to forty feet long, that is to say, about six times as big as an elephant or a camel.

Other reptiles, which began to live in the trees, needed not only legs for walking, but wings for moving from tree to tree. So some part of their skin grew into this shape, which later got covered with feathers, and became wings. And their tails became a sort of gear. These were the ancestors of the various birds we know.

At one stage of this development, however, there was, perhaps, a certain change of climate, or some other accident. And all the huge reptiles died.

4

And now the earth came to be populated by another group of reptiles which changed into animals called mammals, from mammae, or the breasts of the mother.

They did not have scales like the fishes. Nor feathers like .the birds. They had hair on their bodies. And they grew other wonderful habits, which helped them to survive and become superior to the other animals. For instance, the female mammal developed the young inside her body, unlike the other animals who lay eggs and whose little ones had to face the heat and the cold and the wild beasts as soon as they came out of the eggs. Thus ,the young mammals found it easier to survive and learnt more things from their mothers.

Almost all the animals we see around us, or in the zoo, are mammals.

One of these mammals was to rise superior to the others and grow into the shape of man. It learned to use its forefeet to hold its prey. By practice through the hunt, the forefeet became like hands. Also, after many difficulties, it seems to have learnt to stand on its hind legs.

This mammal, which may have been like an ape or a monkey, but was probably better than both could hunt better and live in almost any climate. It moved about with other mammals in order to defend itself more easily against all comers. And it could grunt and warn its children of any lurking danger. The grunt was later to become our kind of talk.

This small, shaggy creature was our first manlike ancestor.

CHAPTER SECOND

OUR GREAT-GREAT-GREAT-GREAT-GREAT-GREAT-GREAT GRANDFATHER AND OURSELVES

1

If you ask yourself, how much you know of your grandfather, or great-grandfather, or the grandfather's grandfather, you will find that you know very little or nothing about these ancestors. So you can imagine how much more difficult it is to know anything about our great-great-great-great-great-great-great grandfather and his ancestors, up to the first shaggy man, who lived millions of years ago.

But our wise men have been trying to find out something about these remote ancestors by looking at skulls which they have found buried in various parts of the world.

An ancient Western sage, Horace, said that when we travel we change our ideas according to the climate. So, as we go on our journey to the past, we find that the weather seems to have changed man's life.

Thus, if we go back a million years ago, to the point where the story of mammal-man may be said to have begun, we find that there were four different ice ages, separated by thousands of years of warm periods. These ice ages may have been caused by the lessening of the sun's heat on the earth. And the warm intervals may have been caused by the increase of what is called 'solar radiation'. But a great cold wave came about sixty-eight thousand years before Christ. After that, about 3000 years B.C., the climate changed. There were not so many cold and hot spells, and the weather became more or less as it is today.

The shaggy old mammal, whom we have called our ancestor, is so called because he could grunt or speak and make tools.

Now, it is quite certain that our first ancestor was like all the other mammals, the apes, the gorrillas, the chimpanzees, the orang-outangs and the gibbons, all of whom you can see in the zoo. But, though related, men and apes seem to be rather distant cousins.

We can imagine that our ancestor was rather more like a man than an ape. He was no better in his looks than the ape. But while the ape could swing about from tree to tree, the small hairy man began to walk on the earth and hunt for food.

Several clues to the shape and size and form of this mysterious creature have been found in all parts of the world. For instance, in the Siwalik Hills of North-West India, in Kenya, in East and South Africa, in Peking and in Java, skulls have been found which look as if they might be the skulls of the common ancestor of apes and men.

2

How are we to tell which is which, by looking at the skulls and the bones, whether they are the skulls of monkeys or men?

The answer is, as Professor Gordon Childe has said, *that man makes himself.* He uses his hands and his brains.

And the person, who was our ancestor, became different from the animals when he began to make tools, like 'hand-axes' and 'flake tools' for killing beasts and his enemies, and for cutting wood.

It seems that the users of the 'flake tool' were 'ancient.' And those who plied the 'hand-axe' were 'modern'. The more ancient man had big lower jaws, with which he obviously ate raw flesh. In the skull of the oldest Frenchman, found in a cave called Fontechevade, the ordinary human jaw of 'modern' man appears, with ordinary teeth, like yours and mine and those of Pandit Nehru.

It makes one dizzy to think that even this 'modern' man lived thousands of years ago. In order, therefore, to grasp very roughly, the periods during which man evolved, our wise men have defined various ages of prehistory and history, according to the tools used by our ancestors.

3

During the long ice ages, man was just surviving against the elements and learning to use his limbs to get food. So the various ages and phases of man have been described on the basis of how man adopts new methods to make his livelihood.

This story begins about five hundred thousand years ago. At this stage, man emerges as a rare animal and a *food gatherer*. He hunted other animals and collected whatever food nature could provide. During the earliest and longest phase of man's journey on the earth, man was thus just *gathering* food. Archaeologists who study past history, have called this ninety-eight per cent of man's journey on our planet the Palaeolithic or the Old Stone Age. Anthropologists, who study man as part of the animal kingdom, call this phase *savagery*. And geologists, who study the physical shape of the earth, call it *pleistocene*. As everyone knows, *food gathering* in this way is still practised by some small backward tribes in the jungles of Africa and Malaya and in North-West Australia and in the Arctic regions.

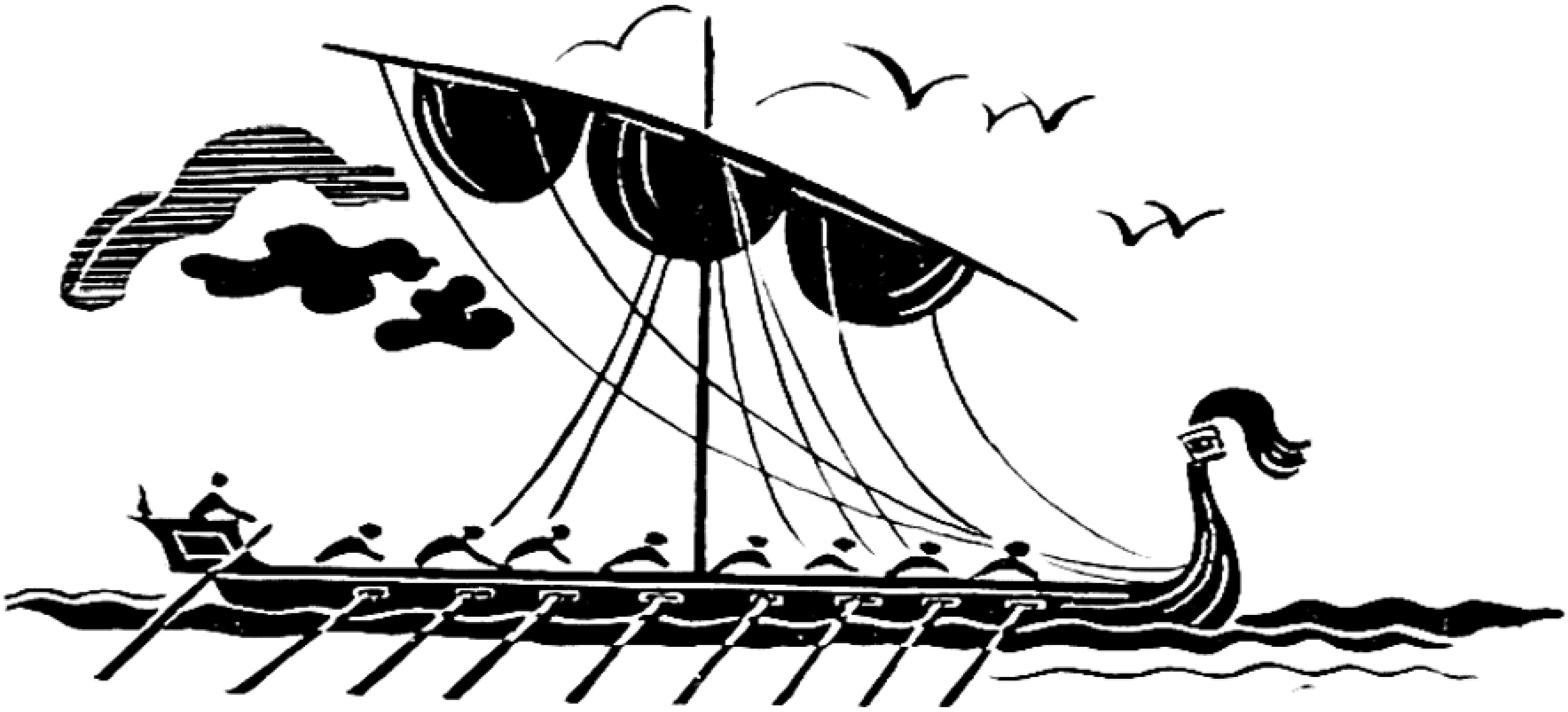
About ten thousand years ago, some societies, first in the Near East, began to supplement the fruit from the trees by growing plants and by breeding domestic animals. Archaeologists call it the Neolithic or the New Stone Age. Anthropologists call this *food producing* phase, *barbarism*. Actually, however, the word Neolithic has to be stretched a little, because many societies still use the tools of the New Stone Age, though they have also learnt to use iron and bronze tools and weapons of later times.

The next phase, in which man made himself, began about five thousand years ago in the valleys of the Nile, the Tigris-Euphrates and the Indus. Here, in certain villages, which grew into towns and cities, society made the peasants produce more food than they needed for themselves. The extra produce was given to those men who did not farm the land, such as potters and weavers and priests and merchants and officials. Now man also began to write down his thoughts, to make beautiful houses and to live consciously. This period is called *civilization.*

The period, which is called *civilization,* may be divided into four parts.

(a) The first two thousand years of this phase are called the Bronze Age. Because men began to use copper and bronze for tools and weapons. But these metals were expensive and were, therefore, only used by kings, chiefs, priests and other exalted men, who were the wealthiest men in the community. India, Egypt, China and other countries all helped to perfect the bronze and copper ages.

(b) The early Iron Age began about twelve hundred years before Christ. At this time a good method of producing wrought iron was found. Also writing, which had been so far a magic mystery in the hands of the priests, became popular through the invention of an alphabet in the Near East. About 700 B.C., small money began to be used for buying and selling things. In the Indian, Greek and Roman civilizations, boats, pulled by galley slaves, began to be used for taking merchandise from one place to another. And many rich merchants and farmers arose. The population also increased, specially around the Mediterranean Sea. But it was checked by the poverty of the slaves, who did



the actual work of producing wealth by farming the land and making things.

(c) Later, in India, little village republics grew up. In Europe, the wandering peasants found employment on the land owned by feudal lords and noblemen. These peasants were no longer slaves, as in Greece or Rome, but tenants on the large estates. The artisans combined together in brotherhoods called guilds. Trade and industry flourished on the basis of food from well-cultivated lands, irrigated by canals. The population of Europe grew apace.

(d) As the West developed, many brave men went out on the high seas and discovered the routes to America and India and the Far East. All these countries became markets for the goods produced in Europe. And the Atlantic countries began to import food from all parts of the world in exchange for machine-made mass produced goods. As was shown by the sharp rise in the population figures of England in 1750 and 1800, the new enterprises of men, in what is called the bourgeois society, seem to have been highly successful.

(e) The industrial revolution in Europe was soon to spread all over the world. And, about two hundred years ago, we became part of this development, when the British conquered India.

Now we are free. But we still have to learn many things, by which we can use our opportunities, to give more happiness to our people and to create a new and more beautiful culture.

CHAPTER THIRD

THE TRUE FAIRY TALE
or
THE ROMANCE OF FOOD

1

I have called this chapter the True Fairy Tale, because everything we are going to talk about here is really quite strange, though it looks ordinary. After all, we all eat our bread by habit, whether it is a loaf or a baked chappati. And very few people ask how it came to be made? Where the flour came from? And how the grain is produced from which the flour is made. And whether there always was wheat and corn and barley. And yet, when we come to think of it, the growing of food seems like a miracle.

For it is man's ability to use his hands and brains, as I have said in the previous chapters, that enables him to eat baked loaves, while the cows and buffaloes eat grass, and the tigers and panthers eat goats or stray dogs.

Our ancient ancestor was not very different from the animals, until he began to cook food. At first he roamed about, even as did the herds of buffaloes and lions and zebras and elephants, eating the wild grass, the herbs and the fruits that grew in the jungles. The sun shone during the day, and the moon and the stars lit the dark night. And the seasons changed, according to the movement of the earth around the sun. And the grasses and shrubs and trees grew and died. And the winds blew. And the rain fell. And, for a very long time, man could not understand anything around him. He merely crawled about in the thick vegetation or from cave to cave.

It is only when man began to rearrange the elements of nature, that he began to spread his influence and became the most important animal on the earth.

2

How exactly did man come to impose himself on the rest of the creation, find more food for himself and even for his domestic animals?

At first he had a hand-to-mouth existence, plucking and eating berries, picking fruits and finding seeds, feasting on bird's eggs, and following the flight of the bees to steal the wild honey which they collected together from the flowers in their honeycombs. Then he learnt to make weapons of flint, or stones, in order to hunt the animals. He had found the beasts of prey pouncing upon the defenceless plant eaters. And when in the winter, he found fewer herbs and fruits, he began to feed on the flesh of the hunted animals.

We can imagine him, squatting on the ground in front of his cave, knip-knapping and chip-chipping at a piece of stone. We see his anxiety in shaping this weapon, by knocking off splinters because he would surely go hungry if the flint was not sharp enough to pierce the skin of the animal during the chase. The crude flint was good enough to throw at the prey. But soon the knip-knap man found that he needed an axe to cut the flesh of the hunted animal with. So he chipped the stones sharper and made axes. Many of these early tools have been found among the heaps of sea shell. And it seems probable that he used the sharp flints also for getting fish out of the oysters and cockles and whelks and mussels.

The knip-knap man suddenly seems to have found that the taste of raw flesh improves when it is roasted in the fire. Legend has it that a baby pig fell into the red embers one day. As he took it out, it looked so good that he began to smack his lips. Whereupon the other cave men began to snatch at the roasted pigling. Thus was discovered a new dish. We shall talk of the discovery of fire in the next chapter. But here it must be said, that this was one of the most important steps taken by ancient man in his struggle to live.

The people of the new stone age found that nuts, acorns and seeds could be kept for quite a long time after they were gathered. This was another useful discovery. So they began to store food for use in the winter, when there were no fruits or berries and when they could not catch prey by the hunt.

But a greater discovery, the revolution of the stone age came when man found that seeds buried in the ground would grow into new plants. Some seeds were buried near dead bodies, according to the custom of those days, and they sprouted forth. So man passed from *food gathering* and *food storing* to *food growing*.

We must remember that all these discoveries took thousands of years of hard work. And as

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work is culture, food growing or agriculture was the first culture of the world. For, once man could grow food, he needed other comforts and began to create those things which are supposed to be civilized. The 'civilization' of our savage ancestors may not have been like our 'civilization', but nevertheless it was 'civilization' of a sort.

When man could sow seeds in the earth which grew into plants, he naturally thought of staying in one place, instead of wandering about, gathering food and hunting animals. So the growers of corn began to live in little clusters of huts. And they tamed animals which gave them milk. Of course, it was only possible to live in villages, where they were not likely to be attacked by wild animals or other enemies. Also, they saw that one place was better than another. And, ten thousand years ago, it seems that the safest and most fertile parts of the world were the valleys of the five great rivers, the Nile, the Euphrates, the Tigris, the Howangho and the Indus.

4

The climate of these parts of the world was warm and moist when the greater part of Europe was covered with ice. While man began to grow corn here, the cavemen of France were still hunting reindeer and wild horses. And, apart from the plentiful water and the rich alluvial earth of these regions, they were safe from invasions. So, for hundreds of years, men tilled the soil here and learnt new things.

For instance, when the men of the Nile valley saw how well things grew from the soil, flooded by the rivers after the rains, they began to dig ditches to carry water to wider and wider and wider areas. These ditches were the first canals. And this irrigation system was a very forward step in the story of food growing.

It is said that barley was the first corn which man learnt to grow for himself. But in many parts of the East, wheat too was grown. It is

certain that the people of Egypt knew how to grow wheat six thousand years ago. In the tombs of their kings there are pictures of men grinding the grain between mill-stones as they sit on the ground, and of men milking wide-horned cows, as well as of farmer hoeing and ploughing.

The hoe was the first farm implement invented, when the crude stone axes and scrapers and digging sticks were given up. The early Egyptian hoe is very much like our own, but made of flint instead of iron.

But making furrows, in which to sow the seed with the hoe, is hard work, specially when there are big fields to till. So men began to look for other ways of making these furrows.

They made a heavy block, with a point underneath, and dragged it along. This instrument was not useful when the soil was hard. So they fitted handles to the block and one man walked behind, pressing the point into the earth while the other pulled. This was the first plough. And it is one of the greatest inventions in the history of man, because man cannot live without food, though he can live without many other things.

The ploughs were improved from age to age. And men invented other implements for harvesting and thrashing corn, such as reaping hooks and flails. Also, they began to use animals to help them in their work, oxen in Egypt, the donkey in China, camels in the Tigris and Euphrates valleys, great bulls in the Indus valley, and horses in Sumeria.

These peoples, specially in Egypt and the islands of the Mediterranean, began to rear flocks of goats and sheep for food, and for wool, which

they wove into cloth. And they began to send the extra food they had to other lands. So we see how, on the basis of agriculture, there came trade and commerce, weights and measures to weigh things with, words and symbols to communicate messages on paper, and houses and palaces and temples, and clothes and jewels, and pots made of stone and wood and bronze and iron. In Mohenjo-daro and Harappa we have found all signs of the flourishing cities of old. And we have seen how rich was the culture of our ancient continent. Not only in the valley of the Indus did man advance early, but in the broad stretches of China.

The progress of agriculture everywhere depended on the making of better instruments.

The first ears of corn were gathered by hand. But soon came the sickle, made of a row of flint-blades. The corn thus cut was stored in baskets plastered with clay, and then in huge jars made of earth.

The women folk must have invented a great many of these things. For, while men still hunted, women had to grind the corn into flour. At first they did this on a flat stone with a rolling pin, but later they used mill-stones.

The milking of domestic animals, like cows, is still done by women in many parts of the world. But the men took the herds of cattle out to pasture on the plains of grass. Apart from the corn growers, the herdsmen and shepherds became important providers of food. And, as the cattle wealth was precious, men began to defend their herds by building forts, around which they dug ditches or moats.

Soon man discovered that it was important to notice the seasons and grow corn according to the weather. For instance, in the autumn, when the rains were over, men ploughed the earth. The clods were then levelled by hand with wooden hoes. The seed was sown and pressed into the

earth by the feet of animals driven over the fields. When it grew, it was harvested and carried to the threshing floor. After threshing, the grain was winnowed by the womenfolk, who tossed it in the air on boards of straw or wood, so that the chaff was blown away by the wind and the grain remained.

The Egyptians had three seasons according to the flow of the Nile : the end of the flood, the coming of the cold weather, and the hot summer. And here, as elsewhere, the month began with a new moon, lasting to the next new moon. The month had three weeks, each week being ten days long. The twelve months, of thirty days each, made up a year of 360 days, to which five holidays were added. Later, a better way of measuring the year by the sun was discovered. Until today this is the calendar we use, with a few slight variations.

5

The Egyptians made great advances in the art of producing food. Therefore, they became richer and richer. And the richest and the strongest among them became their King, or Pharaoh, as he was called. They built beautiful cities like Memphis and Thebes.

The poorer people of the Nile valley were not so fortunate as the rich. Many of them were slaves. But at least the slaves were not so badly off as the men and women of the hunting tribes, who were always in danger of dying through lack of food. And some Egyptian landlords were good to the poor peasants. For instance, one of them, a prince, who lived about the nineteenth century B.C., wrote :

"No labourer have I arrested, no shepherds have I banished: there was no superintendent of workmen whose labourers I have taken away from their work. In my time there were no poor, and none were hungry in my day. When the years of famine came, I ploughed all the fields of my home (district), from the southern to the northern boundary. I kept the inhabitants alive and gave them food, so that not one was

hungry. I gave to the widow even as to her who had a husband, and I never preferred the great to the small."

The Egyptians also made experiments with different kind of crops and animals. They grew barley and learnt how to make beer from it. They planted vines and made wine from the grapes. They added dates and figs to their diet, and vegetables like beans and lettuces. They kept geese and ducks, roast goose being their favourite dish. They grew flax for linen, and papyrus reed, from which they made many things, including candles and paper.

Thus they created some of the first arts of civilization. For, when they learnt to use metal, instead of stone, for making tools, they would cut blocks of stones and build beautiful buildings. The famous Pyramids, which are the tombs of their kings, are one of the seven wonders of the world. Thousands of men worked to build the Pyramids. And it took many years to build them. A hundred thousand men worked for nearly twenty years to build the great Pyramid. The slaves had to drag blocks of stones, as big as small houses, for many miles over the desert to the site. Then, they had to push and pull these blocks of stone, into their places. There is a huge statue of a lion, with a man's head, near the great Pyramid. It is called the Sphinx. This and the other towering statues in the temples, built by the men of the Nile, constitute the great glory of Egyptian culture. All these works were a kind of thanksgiving to the God, for the rich crops that the soil of the Nile valley yielded.

6

Another ancient people who built a great civilisation on the basis of rich harvests, were the Jews.

They first lived, north of Babylon, between the rivers, Euphrates and Tigris. The land between the two rivers was very fertile. And here too, some of the earliest men cleared the weeds and began to dig the earth with flint tools and to grow corn. And then they came to live together in the villages. They were ruled by kings, who made laws. A list of these laws, made four thousand years ago, has recently been found.

About two thousand years before Christ, a man called Abraham led the Jews, in search of a new land. They went to Egypt. And here one

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of them, Joseph, became a great statesman. Later, the Pharaohs oppressed the Jews. So, about 1320 B.C., Moses took the Jews out of Egypt, across the Red Sea, to the land of Canaan 'the promised land'. The great Jewish king, David, made Jerusalem his capital about a thousand years before Christ.

7

There were many wars between the Kingdoms of the Nile and those of Euphrates and the Tigris. The face of the world changed, and new people became important. The greatest of these were the Persians, who conquered Babylon and a part of Egypt and spread themselves to the borders of India.

The Persians did not add much to the story of food production. But, through the roads they built in their Empire, men got to know each other, and even plants travelled. For instance, the onion and the pomegranate, which grew in Afghanistan, became known in the West. And the hen, which was first known in India, found its way to Europe.

8

The Chinese civilization is as old as the Egyptian civilization.

But the soil of China was harder and took longer to yield its fruits. The river Howangho, and the Yellow River, were often in flood. And in the other parts of the country there were frequent droughts. A Chinese poet, away from his home in 1121 B.C., wrote :

> "White clouds are in the sky,
> Great shoulders of the hills
> Between us two must lie.
> The road is rough and far,
> Deep fords between us are.
> I pray you not to die."

But man, the miracle-maker, created wonderful works, even in this landscape, long long ago. He controlled the river floods by building dams, canals and reservoirs. He drained the wet deltas at the river mouths. He irrigated the dry lands. And he grew corn by making terraces on the slopes of the hills.

Thousands of years ago, China had a land department, with a minister in charge of public works. He advised people about which soils were suitable for which crops, how to look after the tools, and how to use manure. The Chinese made good manures out of dung, fish-offal and kitchen refuse. Thus they made their soil rich and could get two or three crops a year out of the same land. They not only grew rice, but also fruit trees, which they fed with special manures.

And, with the enormous produce from the soil to depend on, they cultivated their arts. The art of eating with chopsticks was as important to them as beautiful writing, bronze casting, ivory carving, painting or sculpture and discussing good manners.

9

In our own homeland, India, men began very early to grow rich harvests. Long before the Aryan nomads came wandering in search of food, the original Neolithics, the proto-Dravidians and the Dravidians, had begun to cultivate the soil of the Indus valley. The cities of Mohenjo-daro and Harappa could not have been so beautifully planned, and full of such lovely gold jewellery and pots and seals and toys, if there had not been plentiful harvests.

The Indus valley civilization goes back to about 2500 B.C. But even then there seems to have been enough trade between Northern India and the land between the two rivers, Euphrates and Tigris. The change of climate and the decay of trade, or some other accident, brought this culture to a sudden end in the year 1700 B.C. or 1400 B.C.

The next phase of our ancient history starts with the Aryan invasion, about 1500 B.C.

The Aryan nomads learnt from the Dravidians, whom they conquered, how to grow grain crops. They were good horsemen and knew how to tend herds of cattle and flocks of sheep and goats. But till they came to India, they did not know much about farming. They ate beef and other kinds of flesh. But the thing they came to value most was the rich corn of the Indus and the Ganges valleys.

Around the corn-growing regions, the Aryans and the Dravidians built a beautiful world of self-contained villages. The peasants in these villages grew wheat, barley or maize. And they supported the potters who made earthen jars for storing food; the blacksmiths who hoofed the cattle with iron hoofs; the weavers who spun and wove the cloth; the teachers who taught the children; and the priests who recited prayers to the gods to grant good harvests. In the little republics of the self-sufficient villages no one owned land. Not even the king. But everyone had the *right* to till as much as he and his family needed. And to graze his cattle on common pasture land. The chief, or the king, had the right to send his agent to collect his tax in kind. In return for this revenue he looked after roads and kept an army to defend the villages of the kingdom.

This closely knit life of our ancient villages continued nearly until the eighteenth century A.D., when the British began to conquer India. The great merit of the little republics lay in the fact that, whether kings came and kings went, they lasted out. When the invaders were ruthless and occupied the land, the villagers moved away with their cattle wealth and made other little republics on more fertile land. And, as there was always enough land to go around, Bharat, as it was then called, remained a land of milk and honey.

The legend of the rich fertile lands of the Indies and of its great wealth in gold and spices, always tempted the foreigners. So there were many invasions, specially through the North-West Frontier passes. The Greeks, the Persians, the Scythians, the Huns, the Pathans, the Mongols and many other tribes, invaded our country, long before the European invaders came. And, of course, these disasters brought famine and destruction in their train. When foreign kings ruled over the country, canals, wells, roads and other public works were neglected.

Still, on the basis of the bountiful produce of the land, one of the world's greatest civilizations was reared in our country. Some of the earliest books of the world were written here. The boldness of the poets of the *Rig-Veda* is apparent from the 'Hymn of Creation'. In the other

Vedas, and the earlier books, called *Upanishads*, the most profound wisdom of our sages is enshrined. Gautama Buddha first preached his tender and compassionate love of man in our land. At the same time Jina taught kindliness to plants and animals and human beings. In the epics *Ramayana* and *Mahabharata*, the stories of love and greed and anger and pity were written from deep knowledge of human emotions. And in the plays of Kalidasa, Harsha, Bana, Sudraka, as well as in the wall paintings of Ajanta, some of the greatest triumphs of man became possible. Few peoples have carved stones as beautifully as our ancestors. And our dances, from the primitive harvest dance to the subtle Bharata Natyam, achieved the highest rhythmic vitality. Our people continued to create such exalted works as long as the good earth produced plenty of food.

10

Unfortunately, the British conquest not only brought alien rule, but altered the arrangement on the land.

Whereas no one *owned* land in our country, but everyone had only certain *rights* in land, the British brought the idea of ownership of land. Their own agriculture had changed a great deal. The ownership of land, having passed from the king to the noblemen and lords and then to rich peasants, squeezed out the small farmers and wage labourers. The same thing happened in India under the British. By a law proposed by Lord Cornwallis, first in Bengal and then elsewhere, a landlord class was created. They paid a small revenue to the British. But they could take as many taxes from the poor peasants and tenants who worked on their lands, as they liked.

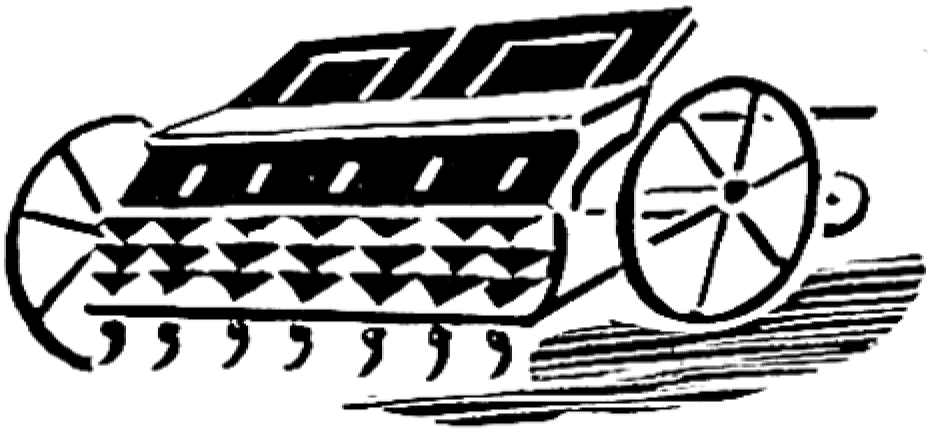
This made the small peasants poorer and poorer. And many were forced to leave the land and go to cities in search of work. As all the ex-peasants could not get jobs in factories which the British had opened, many millions were unemployed and hungry. Apart from the bad system, in which the landlord took all the money, and the small peasants starved, or left the land, there was not much improvement in the water supply. So there were frequent famines. And this miserable condition of our peasantry still continues.

Now, while the conquest of India by the foreigners ruined us, it was because we ourselves were weak that we were conquered. Our own Emperors and Maharajas had neglected the public works, such as canals and tanks and roads. While the British, without wanting to help us very much, brought in the machines which they had invented in the West.

11

For, in Great Britain, there had been big changes on the land. At one time the peasants worked on open fields, ploughing a little land in the year and leaving the other land idle. After the Norman conquest, the peasants worked on their small strips of land and on the estates of the Lord of the Manor, who owned most of the land. The lord employed a bailiff to see that the villagers worked. This meant that the peasants worked harder for the lord than on their own little strips of land. During the fourteenth century, there was a terrible plague in England, called the Black Death, and one third of the people died. No one could tend the crops in the fields and the land was almost deserted. So the landlords turned their fields into pasture-land for sheep. Wool was fetching good prices. Therefore, the lords fenced or 'enclosed' more and more land for sheep. The greed of the landlords knew no bounds. They even 'enclosed' the common grazing grounds. And the poor peasants had nowhere to feed their cattle.

In the eighteenth century, people began to think of growing more food. About this time, a very useful invention was made. This was a horsedrill, a machine for sowing seeds. The



seeds were thus sown in straight furrows and were not wasted, as with the old broadcast method. The plants grew up in straight rows. And the weeds could be kept down by hoeing between the furrows. Thus arose the 'new farming' by which root crops like turnips and lucerne and clover could be grown. These crops made winter food for the animals. So the cattle wealth increased.

The making of new machines, driven by the steam engine, which had then been invented, created new towns where cloth began to be made in factories rather than by home spinning and the handloom. The towns bought much beef and corn from the peasants and also employed many unemployed farmers.

So a new kind of 'enclosure' was attempted to do away with the old 'open fields'. The landlords and bigger peasants began to fence the land in great compact pieces, which they could till as they liked. This meant that the poor peasants, who had no money to pay for fences and none to buy new machines and tools with, sold their lands and worked for neighbours, or went away to the new factory towns. It was a hard time for the small men, the cottagers as they were called. There was hunger and discontent. But the 'new farming' won against the 'open fields' because parliament backed the landlords.

Still, however, the new farming led to improved agriculture. Apart from the machine, which began to be used more and more in farming, scientists discovered that by using various manures they could grow better harvests. These scientific manures are called fertilisers. A bird manure, called guano, was brought from South America. Another useful fertiliser, ammonia salt, was made from a by-product of coal-

gas, which was at that time taking the place of oil-wick lamps for lighting.

The men of science also began to study the way a plant feeds or takes sustenance from the air, soil and water. And thus many improvements were made in draining the soil.

And machinery improved still more. A useful threshing machine was invented in the eighteenth century and came into general use in the nineteenth century, taking the place of the old-fashioned handflail. This new thresher was either driven by water and windpower, or by horses and lathes or by steam. Steam ploughs were introduced in the nineteenth century and this kind of power was also used for mowing and harvesting.

In the twentieth century, the new tractors, driven by petrol, began to seem more useful to the peasants. These are specially useful on the big farms of America and the collective farms of the Soviet Union, where many peasants join together in tilling the land in common.

The tractor can supply power for ploughing, cultivating and harvesting. It can drive and haul the threshing machine. It can pull up roots and do many other things. It works in less time. For instance, it can plough five or six acres in a day, where a couple of bullocks can plough only one acre. It can reap twenty acres from dawn to dusk, when two pairs can also work the barn machine for cutting chaffs and roots, for grinding and crushing grain. And there are other machines, reapers, self-binders, ploughs of all kinds, harrows, drills, and manure distributors, which can all be applied to the useful tractor. Again, nowadays, there

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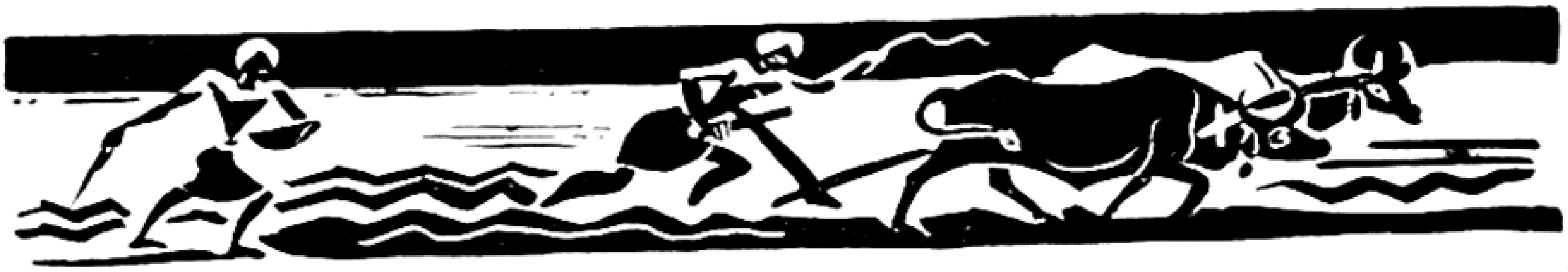
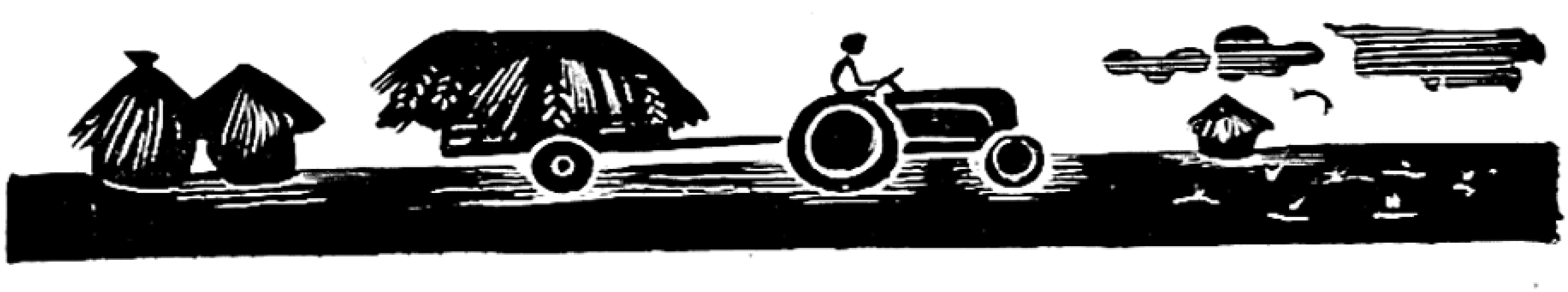




are marvellous machines for milking cows, churning butter and bottling milk.

12

But all these machines, which are available in the world, can only be used by our Indian peasants, if they own the land. For these land reforms are absolutely necessary.

Our scientists are taking great interest in building dams, like the Bhakra dam, the Damodar valley project, to bring more water to the areas where the rains cannot be depended upon or are scanty.

The task of growing more food in our country is the most important single thing on which we can hope to build our future civilization. Until we grow all the food we need, every year, we can create nothing but a sham culture. For, as a wise man of the old world once said : 'When tillage begins the other arts follow.' The peasants are the founders of human civilization.

CHAPTER FOURTH

THE VITAL SPARK

1

You may remember that when you were a child, you sat round the fire in the winter nights. And your mother told you stories of kings and queens, of the sun and the moon, of tigers and jackals, of magic carpets and of the wonderful lamp of Aladdin. But did she ever tell you the story of fire?

I do not think she did. Because it is a story of thousands of years ago. And perhaps she did not even know about it. Let us then tell you the story of fire.

Long, long ago, when the knip-knap man lived in the caves and the hollows of tree-trunks, he was afraid of everything around him. He would run to his cave for safety at the sound of thunder in the clouds, or the flash of lightning, or in a rain storm. He would prowl around the jungle like the other wild animals and eat the fruit from the trees, or kill small animals with his crude weapons. And he would eat the flesh of his prey. He would tear it with his long claws. And he would grind it with his hard molars, without roasting it. Because he did not know the use of fire.

Why did he not know the use of fire?

As I have told you, the earth on which we live is a small chip of the rolling mass of fire which is the sun. When a huge globe of the molten fire of the sun fell off from it, they say it rolled on for millions of years in space and then slowly cooled down, thus forming the hard crust of earth and water and all the other elements. The outer crust of this ball of fire, which became the earth, remained frozen in the ice ages. But the innermost core of the earth has remained hot, because it is like the fiery molten lava of a volcano. This fire, which lies buried in the bowels of the earth, was not known to the caveman.

2

Then, one day, so the story goes, a jungle caught fire through a stoke of lightning.

The caveman suddenly heard the crackling of leaves and the bursting of timber. He thought that some enemy was approaching with a long red tongue, leaping over trees, his shaggy, black hair spread all over the sky, killing everything in its way. He went and told his fellow cavemen of this terrible demon.

The cavemen all came out of hiding, with their crude axes and stone clubs, to destroy the enemy. But the jungle was ablaze and the trees rolled and spluttered as they burned.

One of the cavemen flourished his club in the air and struck the nearest tree, which stood with its fiery arms and its smoky head, spitting red-hot anger. One of the burning branches of the tree fell. And the crowd of cavemen dragged it into their cave victoriously. They shut it up in a cavern and imprisoned it by putting up a huge stone at the mouth of the cave.

The next morning they removed the stone an panted and coughed for breath. And then it died. The cavemen had sat outside in the cold and watched, through the crevices, the slow agony of their enemy's death.

Later, they went inside the cave. The huge branch of the tree had stopped burning, and a

layer of ashes covered its body. But the cinders were still warm.

The cavemen, whose teeth chattered with the icy cold outside, found the cave very cosy. Their limbs relaxed, and they sat round the hot ashes and found their enemy tamed, quiet and warm.

Then all the cavemen ran out to the jungle and fetched the burning branches into their caves. The searing enemy, which had looked so ferocious, now became a friend. And the cavemen danced round the fire.

But still these men did not know where the fire came from. When rain fell and the fire had been extinguished, the cavemen missed their warm friend.

3

After some time, it so happened that a caveman was sharpening a piece of stone, to make an axe to hack animals with. And lo ! sparks of fire leapt out of the stone. He was frightened and ran to his mates and showed the dread wonder. The other cavemen tried, gingerly, to create more sparks. They found that, when this kind of flint struck another flint, it set the dry leaves of the trees aflame. They were all overjoyed to see that their old friend, the fire, had awakened from its long sleep and come back again.

Thus fire was born. And for centuries men produced it by striking flint on flint. Is it not strange that the soft, sinuous leaping tongues of flames should lie inside a hard stone! But man seems to have discovered this important fact in the ancient countries, of Egypt, Babylon, China and India, during some time or other, before history began.

Later, a 'tinder box' was made, with a flint, a piece of steel, and some fluffy shavings in it, called tinder. The steel was struck on the stone, and the sparks which arose caught the tinder. And thus arose a flame.

It was a great bother to carry the tinder box about. So the match box was invented. Pine wood is cut into splints. And these are dipped in paraffin oil, so that the wood may burn better. When the sticks are dry, the machine passes all their tips through a mixture of glue and other substances, of which phosphorus is the most important. The stuff made from phosphorus makes the match catch fire. When the mixture is dry the matches are put into a box. Thus fire can be carried about in the pocket.

4

Let us now see how man improved the quality of fire and used it for his various purposes.

Apart from roasting meat, the cavemen had at first no other use for it except to warm themselves. They went to sleep in the dark and lived by the light of the day.

Later on, they found that the fat of the animals they roasted could burn and glow. So they put the fat into the hollow of a stone, with a little piece of sheep's wool twisted into a wick to float in the oil. This

was their first lamp. And, in many parts of the world, people still use it. In our country, the potters make little clay saucers into which we put oil and cotton wicks and hundreds of these are lit on Diwali night.

In our old book, the *Vedas*, we read that our ancestors worshipped fire as the god Agni.

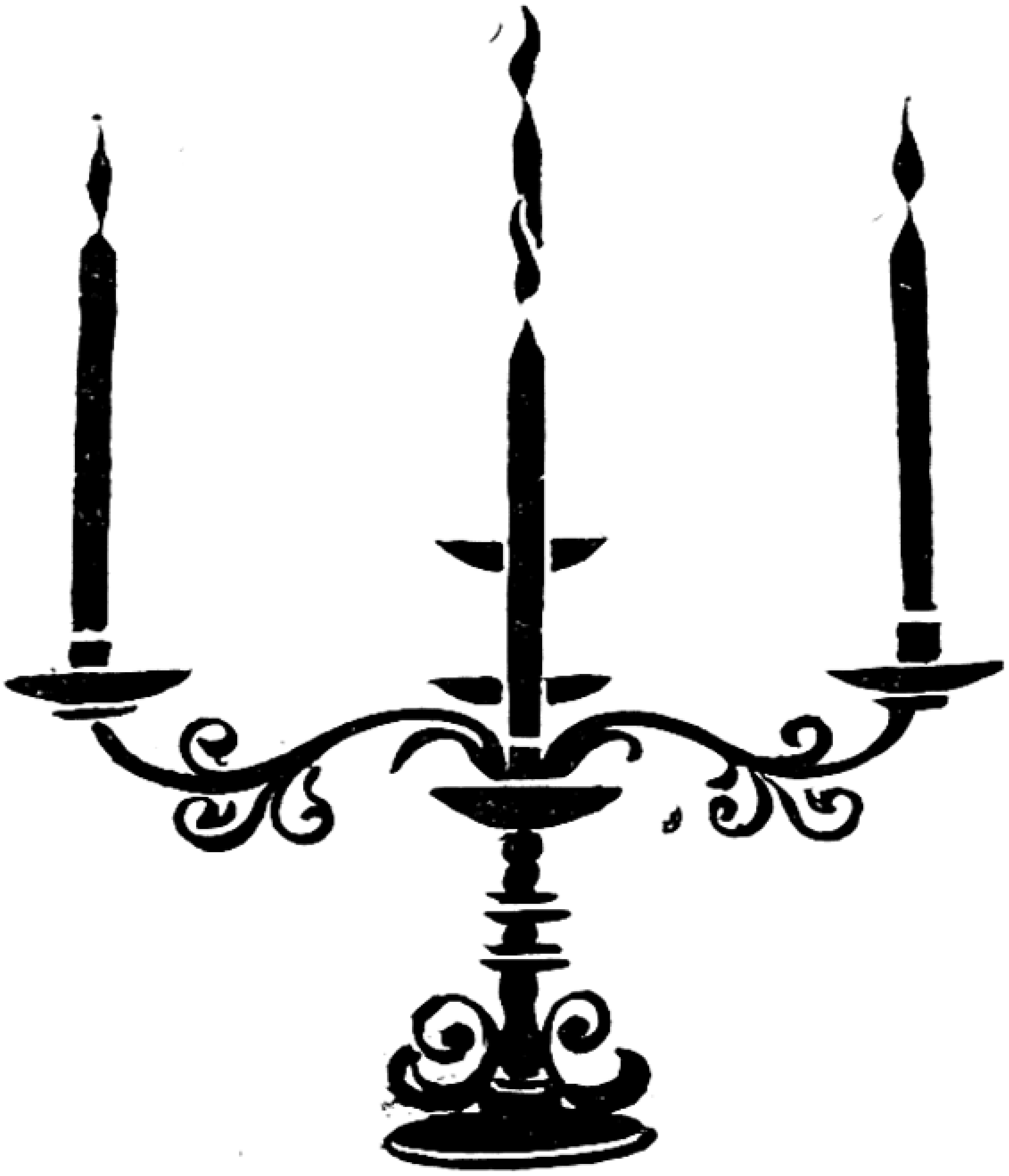
And no ritual was complete without the purifying flame, around which the priests sat and performed their various rites and recited their prayers.

The first fireplaces in our country seem to have been like little pits dug in the earth, or hollow stones, which were placed in the middle of the room. As the firewood burnt in these *havan-kunds* was sandalwood, or some other similar fuel, people did not mind the smoke and no chimneys were built. In other ancient countries also, fire was burnt on a large stone in the middle of the room. But they had a hole in the roof to carry the smoke away. It took a long time before a proper chimney, with bricks, was built.

After a long time, man seems to have thought of making the fat which he burnt in the saucer into a solid candle. Perhaps he saw the fat freezing in the winter with the wick in it. And he could take these lamps about.

The first candles were, therefore, called 'dips' because they were just threads dipped in fat.

As time went on, bigger and better candles were made. And it became a custom to light many of them together. For they looked beautiful as they glowed together. In millions of homes in the world, people still use the candelabra,



or chandeliers, on which candles are decoratively fixed.

Of course, the difficulty about candles is that they get blown out by the wind and the grease drops. And they do not last very long.

These defects were obvious to the wise men who tried to find some other way of making light.

5

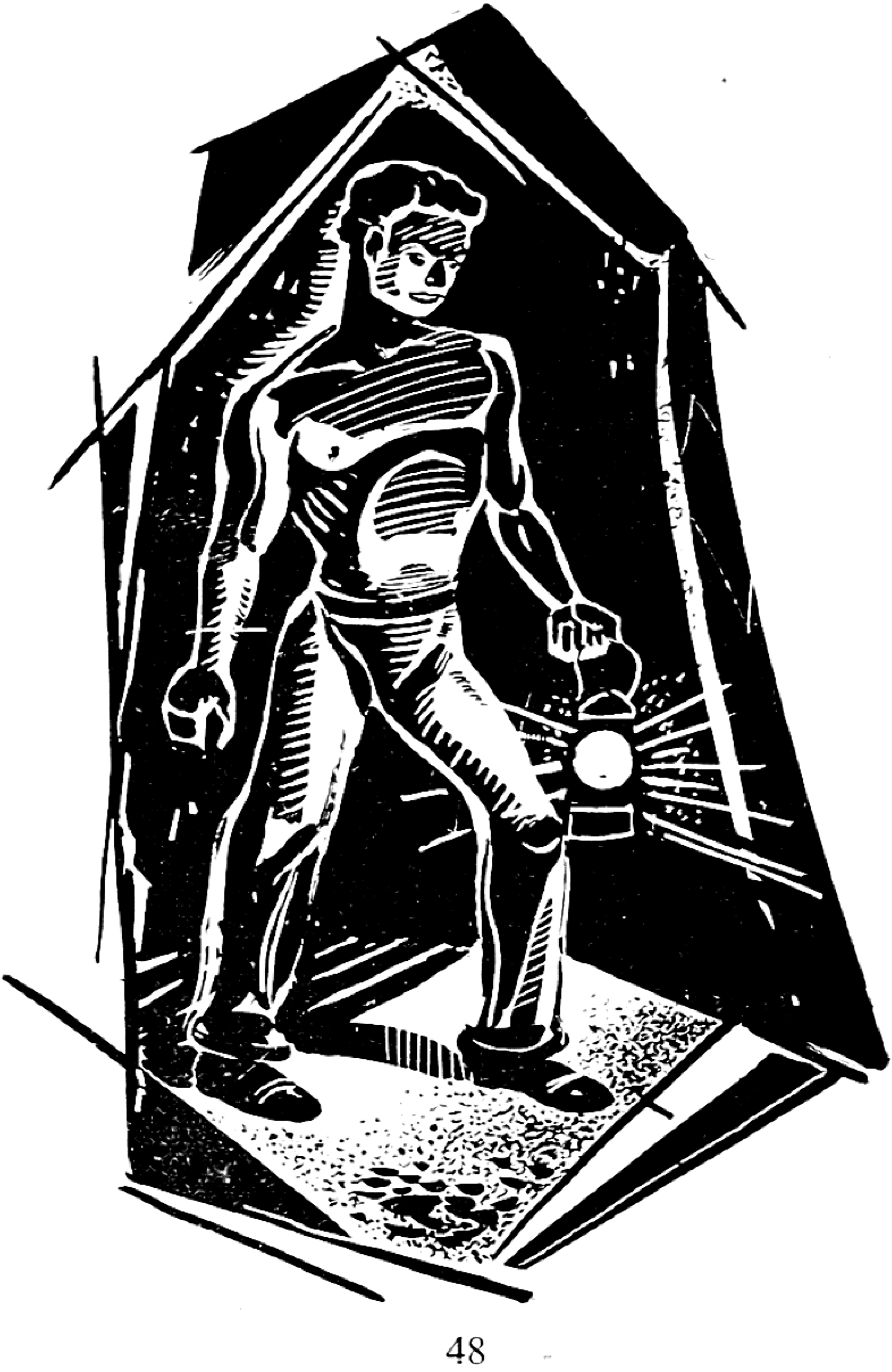
He must have been a very clever man who discovered the next best thing which gives beautiful light—gas.

As you probably know, gas is produced from coal. The wise man took some pieces of coal and put them in a little kettle called the retort. He burnt a little fire under the retort and then held a flame to the spout of the retort. Out came a bright flame from the retort itself. That was the first gas-fire.

You will ask where does the coal come from.

To be sure, it is difficult to understand this simple thing. But, actually, it is quite simple. Thousands of years ago, as you know, the land was covered with great forests of stumpy trees. Some of these got buried in the earth and mixed with other things. And for long periods they kept being pressed together, until they formed solid, hard, black rocks, deep beneath the outer crust of the earth. This was coal.

The first coal must have been found by accident. Then men began to dig the earth for it. Even now digging for coal in a mine is a very intricate business. At first a deep hole is dug into the place where a coal mine may be. This hole is called a shaft. A cage, very much like a lift, goes up and down this shaft, taking the men down to the mine. The shaft is controlled by



two wheels. One of the wheels of the shaft goes up and down for the men. And the other brings up the coal.

Before anyone goes down into the mine they make sure that they have no naked light with them, such as matches. Because, deep under the earth, the coal exudes gas and a flame may easily cause explosion if the gas comes into contact with fire. The miners carry an electric lamp. And with the light of this, they hack at the coal with a pick-axe. This is very dangerous work, because the layers of coal might easily fall on top of them.

When a big heap of coal is collected, it is shovelled into trucks. And these trucks are moved sometimes by ponies, sometimes by men and sometimes by machines, to the bottom of the shaft. From here it is sent up to the top. And, after a hard day's work, the poor miners come up by their own shaft, with their sooty, black and grimy clothes, into the light of the world and the fresh air. Gas is made from coal by heating the coal in the gas works and catching the fumes which come off. One cannot see this gas, but everyone knows what it smells like.

This gas is stored in those big round gasholders, which one sees outside almost every town.

From coal is also made coke, which is burnt in stoves and keeps houses beautifully warm in cold weather. And gas, supplied through pipes from the gas works, is used to light our rooms and to warm them and to cook our food on the gas stoves.

6

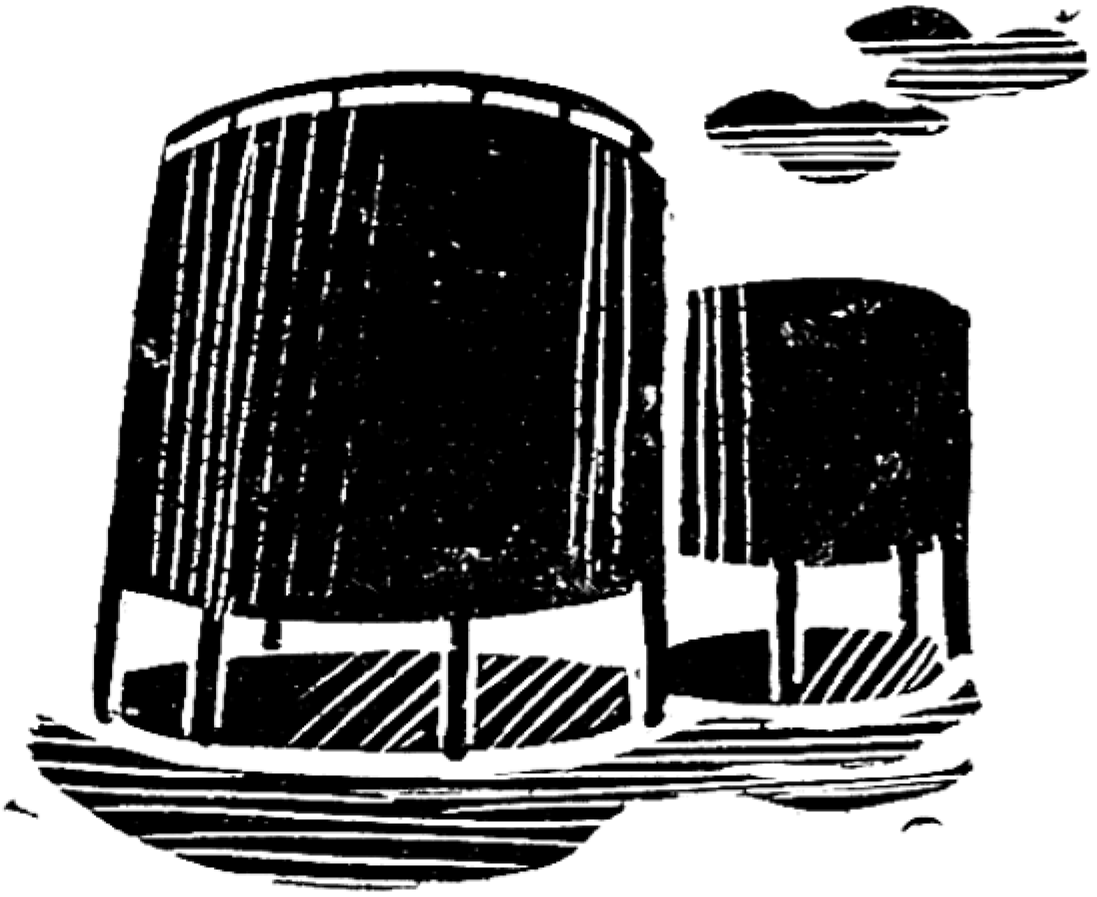
Until the early years of the twentieth century, men thought that gas was a wonderful thing. But with the discovery of electricity, a gas has now come to be regarded as old-fashioned. Electricity is so easy to switch on and gives so much better light. Also, it is cleaner and quicker in giving heat. In fact, it can perform wonders. It makes the trams run along the road. It revolves the fans over our heads. It helps to make ice in the refrigerator. It drives printing presses and brings us our newspapers every day. It supplies power to the mills where machines are made. It makes men and women walk and talk on the screen and gives us the delights of the cinema. The discovery of electricity was one of the greatest boons to mankind.

Now how was the fire in electricity discovered?

In very ancient times, the Greeks noted that if two pieces of amber were wrapped together, they became warm, and could attract various small objects to themselves. And, when put next to a piece of metal, they gave out sparks. The Greek word for amber is electron.

For many hundreds of years the fact about amber amazed the people. But it was not until the eighteenth century, that Benjamin

Franklin became interested in the question. He made many experiments. At last, he succeeded in getting electricity from the clouds with a kite. It was he who suggested the idea of having lightning conductors fixed in tall buildings. A metal rod is attached to a building, which protrudes above the roof and runs down from the side of the house, with its end buried in the earth. During the storm, the large electric currents which come as lightning flashes from the clouds, pass easily through the conductors to the earth, thus protecting the house which would easily be destroyed without the conductors.



Later, an Italian scientist, Signor Luigi Galvani, happened to be experimenting with dead frogs in his laboratory. He noticed that when he touched the nerve of one of the legs of the frog with a metal knife, the legs jerked as though it were alive. This scientist suspected that it might be due to an electric current.

The Professor Volta of Pavia University, in Italy, showed that electricity could be produced by contact between two metals, such as the iron in the knife used on the frog, and the brass of metal plate on which the dead frog was placed.

Thus it was found that the leg nerve of the frog was merely acting as a conductor of electricity. After many experiments, Volta discovered that zinc and copper were the best combinations of metals for producing electricity. He prepared some plates of zinc and copper and cardboard, soaking the cardboard in a solution of salt. Then he placed a piece of copper at the bottom, with a piece of zinc on it, and the cardboard on top. Several layers of these three were placed one over the other. And, by connecting the copper plate at the bottom with a zinc on the top of the pile, by means of two pieces of wire, Volta obtained a spark of electricity. This experiment laid the foundations for the coming of our present-day electric battery. The principle is that in every substance there are two different and equal quantities of positive and negative electricity. These are called charges. When we pull the positive and negative charges apart with the help of energy, they eagerly run towards each other at great speed. We take advantage of this fact and make them work for us.

7

Michael Faraday, born in England, was a great experimenter and found many truths about it. He was the son of a blacksmith and was sent to work at a bookbinder's shop. There he read many of the books which were sent in to be bound. His curiosity grew. He became so interested in science that he attended some lectures of the famous scientist, Sir Humphrey Davy, at the Royal Institution, in London. He became an assistant there and ultimately rose to be the head of the Royal Institution. He added

many truths to physics and chemistry. But his most famous experiment was the one which proves that electric current in one wire can produce another electric current in a different wire, not connected in any way with the first wire. Technically, this is known as the induction of an electric current. And this great discovery, made in 1831, is the key to all the machines known as dynamos, which generate the electric current that lights our houses, drives trams and works hundreds of machines in the factories. It is also the basis of the motor, the telegraph and the telephone and the wireless. Michael Faraday also found how electricity is conducted through melted salts and solutions of salts. This made the electroplating of jewellery and other such processes possible. It would not be an exaggeration to say, that the use of fire in its form of electricity depends, to a great extent, on the works of Faraday.

We must remember the practical uses of electricity. For, man invented these things to help him to live better and to enjoy himself to the full.

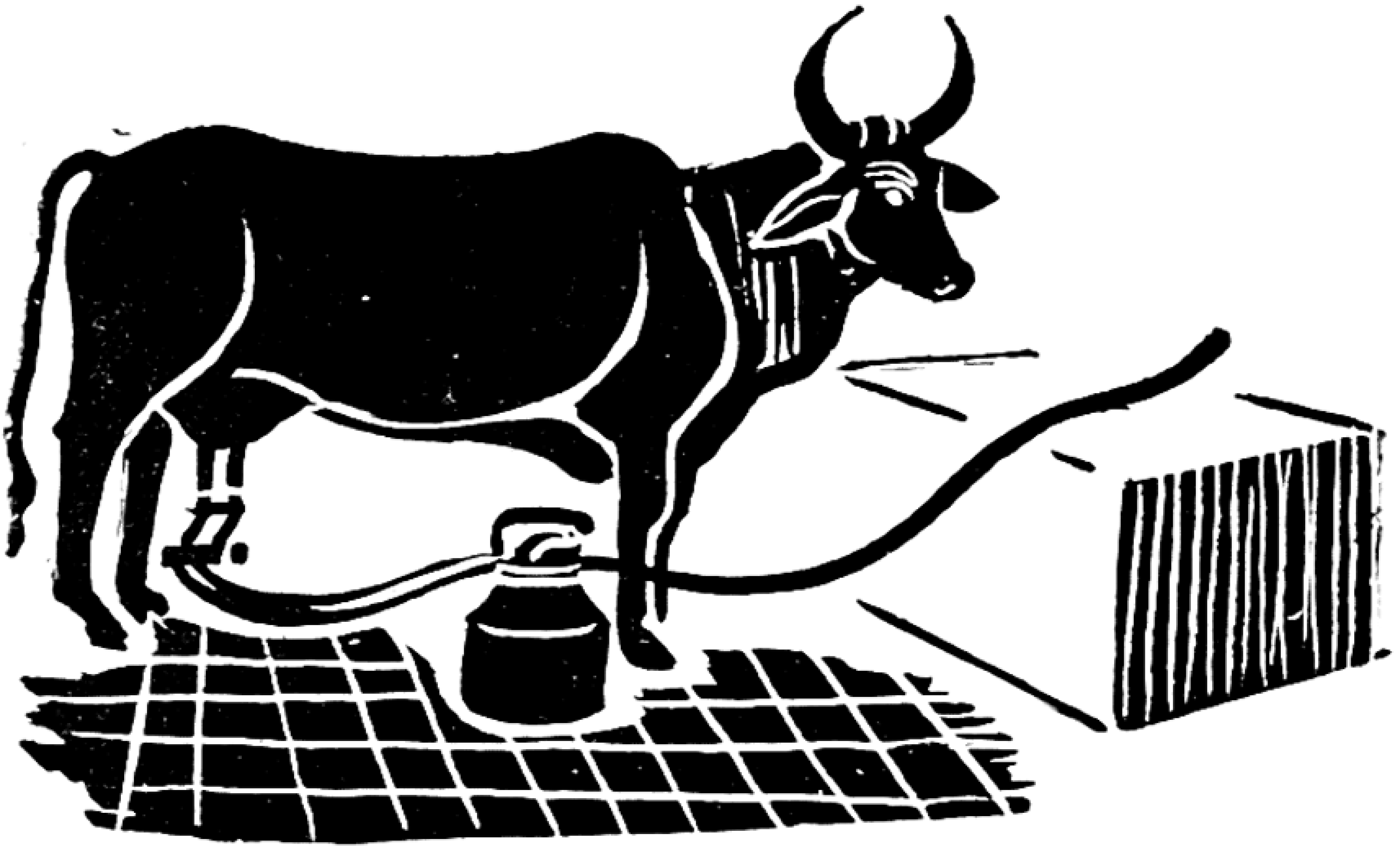
Apart from the motor power which runs our factories and makes thousands of things, we have the telephone. Through this we can talk to our friends in our own town, and even thousands of miles away in England or in France. This could not be done without electricity.

Then the radio, which is a kind of wireless telephone, can send messages or transmit music to millions of listeners from a broadcasting station. The radio gives warning of cyclones and other upheavals of nature. So the ships, even small boats, can sail on the high seas, knowing what seas to avoid.

There is an electric machine which cuts twentynine thousand bread slices in an hour. In the West, there are electric restaurants. A customer comes and chooses the food he wants. He puts the price in a slot. The window of the case opens automatically. The customer takes his food away to a table. When he has finished, he puts the dirty dishes on a moving belt worked by electricity. They go to the electric washing machine, which sorts out the dishes, cleans them in hygienic conditions and dries them up.

There are electric ploughs which can plough the field. And cow can be milked by electricity.

Scientists and doctors can take wonderful X-ray photographs of the inside of the human body. Thus they are able to see what is wrong. There are electric irons for pressing clothes, electric toasters for toasting bread, and electric fire for warming our rooms. Thousands of miles of railroads in the world, and even in India



have been electrified. So that we don't need a puff-puff engine for the railways. In several capitals of the world, there are electric underground railways called the 'tube'. Passengers go down to the train in lifts which are started by pressing an electric button.

And all this is child's play, to the wonderful possibilities opened out by atomic energy.

8

We hear a great deal about atom bombs which can destroy whole cities in a moment. Such bombs were dropped on Hiroshima and Nagasaki in Japan during the second world war. They destroyed almost everything within a distance of many miles. And bad men threaten us with super atom bombs, if we do not do what they say.

But if the world only knew the good things that can come from the proper use of atomic energy, much of the poverty and misery of the world could be removed.

The discovery of atomic energy seems like a miracle. Lord Rutherford, a Cambridge scientist, set about splitting the atom in the early years of our century. The atom, as you know, is one of the smallest particles of matter. It is wonderful that when the smallest particle is broken it can release so much more energy, or fire, than is available in any other way. Of course, it is a difficult and intricate experiment. But it shows how marvellous is man, that he can create an instrument which bottles up lots of energy for use in our daily life.

For, if atomic energy is released for life-giving activities, it could create plentiful harvests in the shortest possible time, run ships and aeroplanes at record speeds, break mountains and change the course of rivers. In fact, the use of the atom could reduce our working hours to the minimum. So that we could all have enough leisure to read and write and think and feel and live more intensely.

Since all these energies are derived from the first spark lit by the ancient man, there are many wise men who think fire is the main principle of life, the very life

force. Mr. George Bernard Shaw, the great Irish writer, explained everything in terms of the life force. The French sage Bergson thought the same. While there is much in this idea, it seems to me that we have to look at the whole of the Universe and see how all the activities and forces of human life make man what he is today. Also, in this way, we can see what we have to do to become wiser and stronger, and how we can master the other forces of nature, which we have not yet been able to conquer.

CHAPTER FIFTH

THE WEB, THE WARP AND THE WOOF

1

A wise man once said that 'man's development is not so much from the lower to the higher as from the confused to the distinct.'

We are not surprised, therefore, to find that when man comes to do things, he does these things to please himself. He takes delight in his own being. That is to say, he loves himself. So we find that all primitive people take joy in making things, whether it is food to eat, fire to warm themselves with, or clothes to wear. And it is remarkable how hard man works to make things more and more beautiful, all the time. It is only when he is tired or dark-minded that he makes ugly things.

It is likely that our earliest ancestors found the rain and the cold very inconvenient and unpleasant. They could only have done two things. They could go into a hole in the ground, or into a cave in the hills. Or, they could cover themselves with leaves or skins. For a long time, they had plenty of hair on their bodies to keep them warm. But, as the hair became more scanty through the rigours of the weather, man needed some kind of a house for his self-protection. As he could not take the cave-house with him wherever he went, he had to put himself in another kind of house. This is the way clothes came to be, whether they were leaves, skins or woven garments. We have never thought of clothes as houses. Have we? But that is what they really are. People who say clothes are only to cover the naked body are foolish. Because it is not good to cover the naked body in a hot climate. And man would have certainly died, if he did not cover himself in the cold climate.

In the old days, men certainly began by wearing the pliable branches of trees, which they also used to build their huts.

Apart from the long grass they wore, it is possible that they made twine by rubbing the fibres in the bark of trees with their hands. This must have been the first coarse thread. Perhaps they used this kind of string for fishing lines. Also, they made rope by weaving grass.

Later, the women began to weave grass into baskets, as millions of people still do in our country.

Then, these early people began to weave the grass and bark twine into coarse cloth. Grass cloth is still made by the primitive people of Madagascar. It seems man found that certain fibres from the stalk of plants made stronger thread than the bark twine. One of these plants is called flax. So, when he began to grow crops, he sowed flax as well as corn.

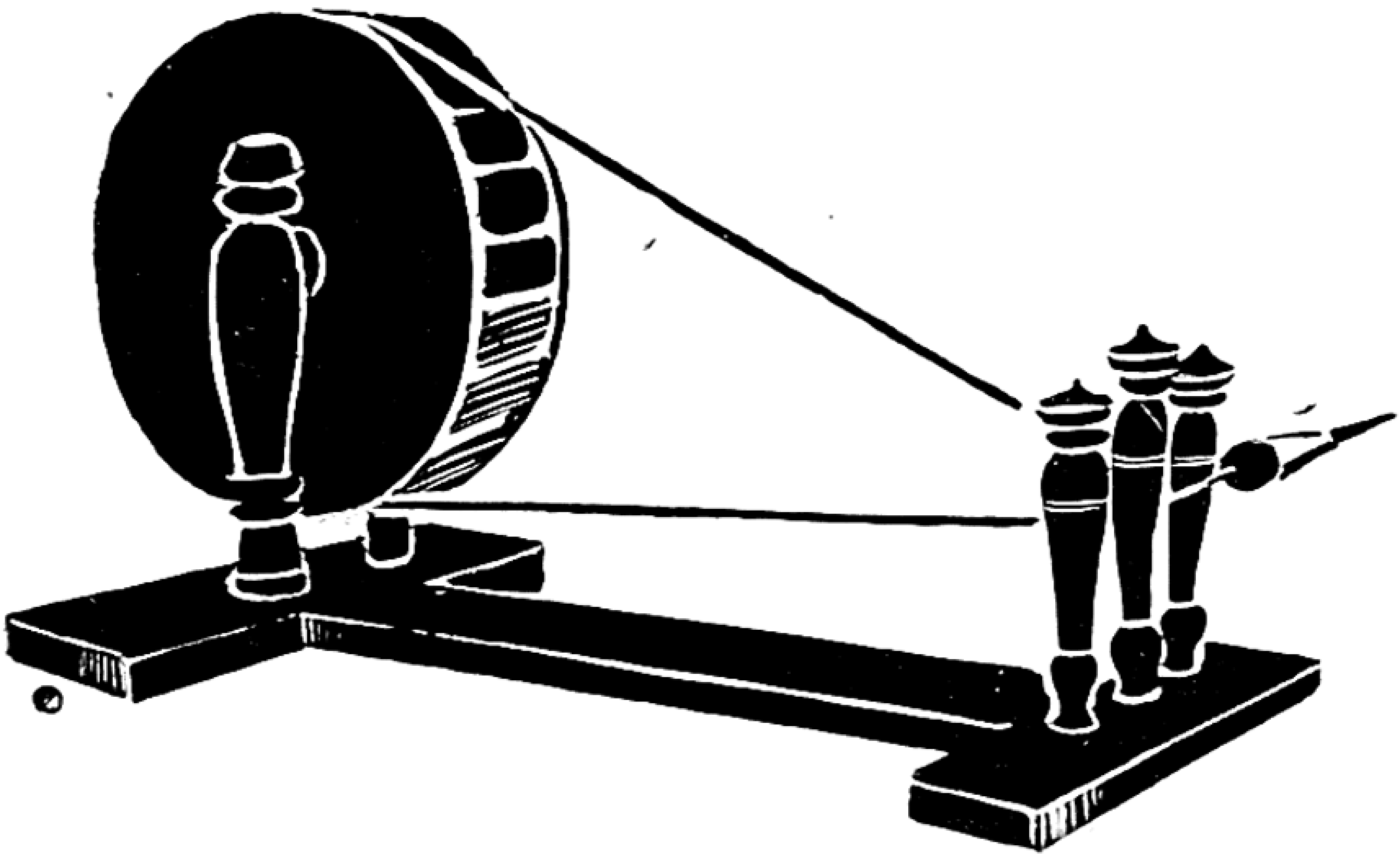
The making of thread by rubbing gave place to the making of thread by spinning. To do this the flax had first to be prepared. The process was somewhat like this: When full grown, the flax plant was pulled out by the roots, tied into bundles and placed in water, until it became soft and pulpy. The fibres became separate from the juicy part of the stem. The bundles of fibre were then beaten by hand to free them from the pulp. They were then sorted and straightened out and were ready to be spun into thread. This old, old method is still carried on in making flax. Though we may now use machines for separating the fibres the flax is still rotted in the same way.

Spinning was a simple business in ancient times. The flax fibres were wrapped round the end of a long stick. This was called the distaff. The spinner held it under the left arm, the end projecting in front. A few fibres were pulled out and twisted into a thread on a spindle made of wood and held in the right hand. An agile movement of the right hand made the spindle go round and round. As it twisted round and round, more fibres were drawn from the distaff and spun into a long thread.

This yarn was wound round the spindle and more fibres were pulled out on the same or another spindle till all the fibres were spun into yarn.

When all these yarns were ready a loom was brought forth. The oldest loom was made of two upright posts, held together by a lighter crosspiece at the top. Some threads, called the warp, were tied to the crosspiece and kept in place by weights fastened to the end.

At first the weaver held the skein of wool in his hand. Lifting the warp, one or two threads at a time, with his hands



he passed the crossed threads, called a weft or a woof, from side to side. Later, a flat blade of bone or wood, called the shuttle, was used to carry the weft threads to the warp.

A number of spinning whorls have been found from ancient times, some with lengths of thread tied to them. But, in our country, as in many other parts of the world, this primitive method of spinning and weaving is still practised by peasants and aboriginal tribes.

It is likely that children and women wore the first woven cloth, while men wore skin garments.

The Latin name for flax is *linum*. The English word linen, which is used for cloth made out of flax, comes from the Latin word *linum*.

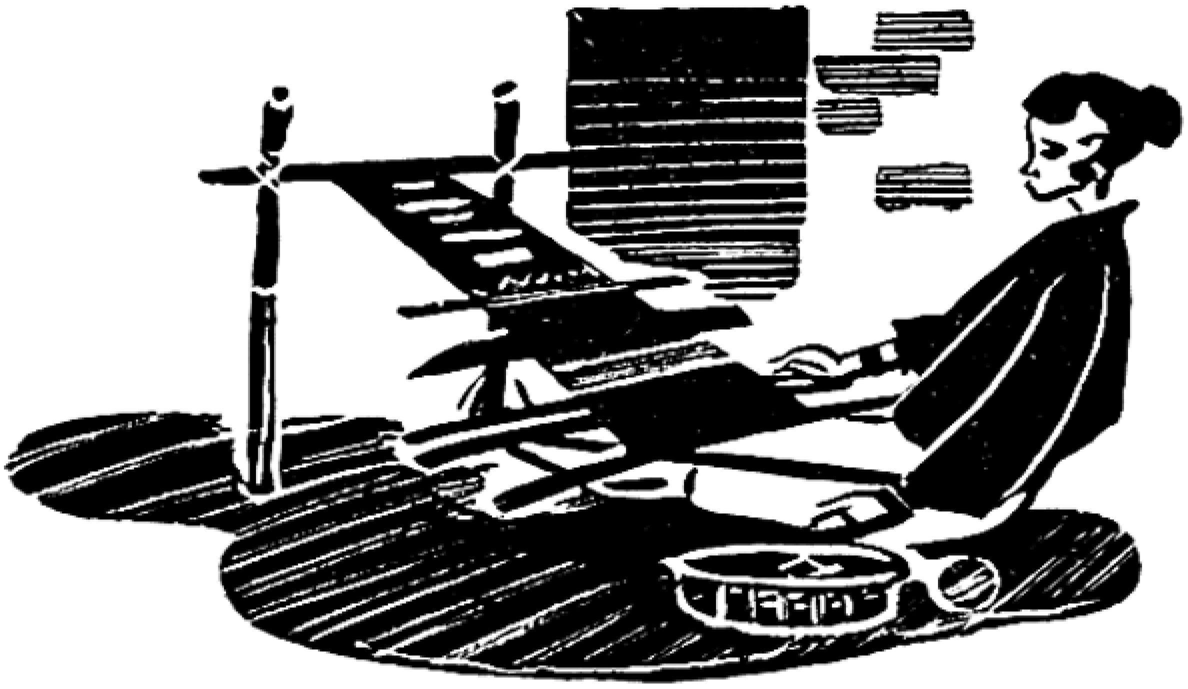
2

Coloured threads began to be used in weaving linen fairly early. The first three colours seem to have been blue, red and yellow.

They were made from plants. For instance, in Europe, blue dye came from woad. In the East it came from indigo. Red dye came from plants like ladies-bedstraw, and from an insect that lives on the prickly oak in the Mediterranean region. A rich red-purple dye was derived from a shell-fish found near Tyre. Yellow dye was made from the barks of trees and from crocus flowers. By mixing these colours other shades were made.

After the discovery of dyed yarns, it became possible to make patterns on the cloth. The early patterns were, of course, simple spots, stripes and checks. Already, in the Egyptian, Babylonian and Indian civilizations, weavers had begun to make very fine linen, ornamented with gold and coloured threads, embroidered on the ordinary cloth. Also, a mixed style of darning and weaving was evolved. The Chinese silk weavers were the most famous in the entire ancient world and they brought their goods to India.

Two Persian monks brought silkworm eggs from China to Constantinople, hidden in a hollow bamboo. The eggs were hatched and



the worms spun their cocoons. And Europe became familiar with raw silk.

The kings of Europe took great interest in the silk weavers and kept them in their courts. The weavers began to weave all kinds of pictures into their silken webs, showing the king hunting, riding, or on the throne. So the art of weaving pictures spread in Europe. By the twelfth century, the weavers of Flanders became famous for their tapesteries, as these woven pictures are called.

In our own country, we find delicate silken dhotis displayed in the earliest paintings. All kinds of fabrics, with lovely sequins, began to be made long long ago. Our muslins became legendary. And the weavers were an important community in each village republic of ancient India.

In most places the spinning wheel took the place of the distaff and the spindle fairly early.

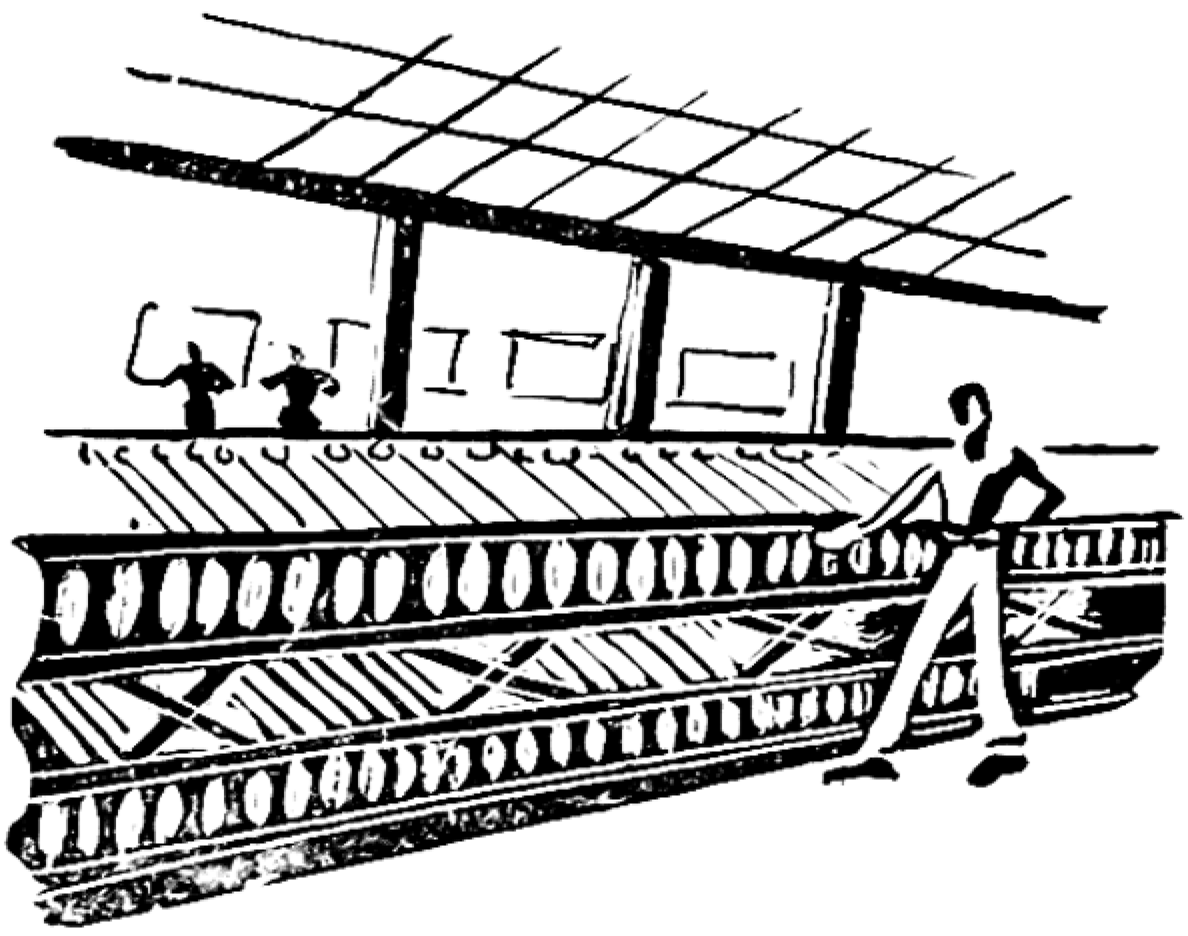
And cotton, the fluffy fruit of the cotton plant, began to be grown in Egypt, India and China. It had already been used, side by side with linen, quite a few centuries ago. But, until the seventeenth century cottons were mainly mixtures of linen and cotton, or linen and wool, particularly in the West.

4

The early cotton industry, based on machines, which was set up in Manchester and other parts of Lancashire in England, imported the cotton from India and the East. And the cloth these mills produced was modelled on the products of our own handlooms. At first the English woollen trade was badly affected by the calicos and cotton goods imported from India. So the English taxed our cotton exports heavily and kept them out to give their woollen a chance. Later, the English began to import raw cotton from India, and sent us finished cloth from their mills. Thus, our handicrafts were ruined and many millions of weavers died through hunger.

The beautiful cotton flower has brought much happiness to mankind, but a great deal of misery to those who made cloth from it.

If you take a handful of fluffy cotton you will find hard seeds in it. All these seeds are picked out before the cotton is sent away. At one time this used to be done by hand. And this was laborious. Cotton picking is such hard work that it is left to the poorest people

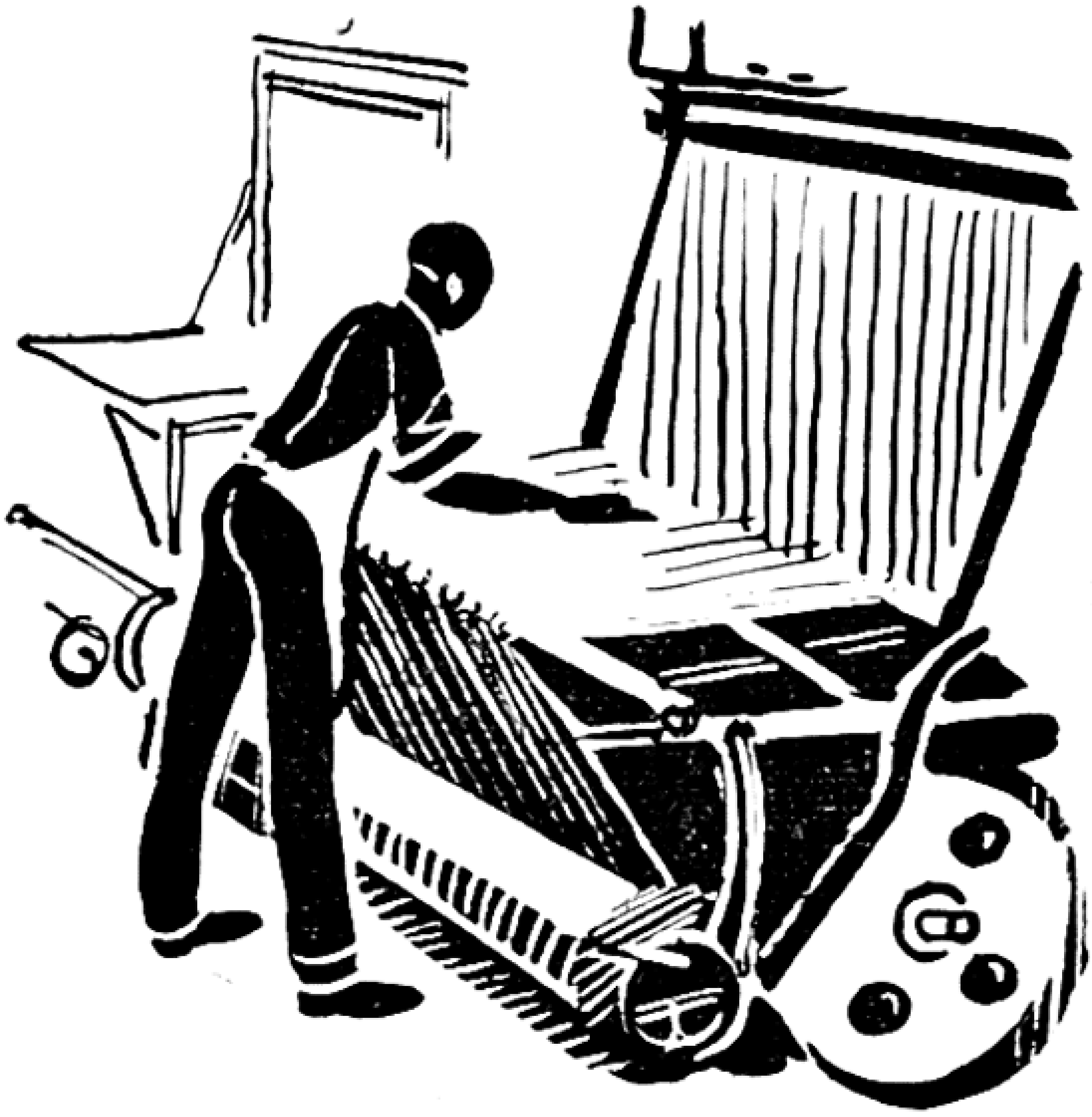


to do. Millions of negroes are employed in cotton picking.

Then a clever man invented a machine to do this. The machine is called the gin. It has spikes, like fingers of steel, and clears the cotton of the seeds very quickly.

The seeds are not wasted. They are pressed for oil. Also the husk is thrashed to make oil-cakes to feed cattle.

The cotton is packed into very big bales and sent to the factories. Here it is cleaned and combed out of knots. Then it is pulled and twisted into threads. This is called spinning. The threads are taken to the weaving room, where there are great big machines. The principle on which these machines work is this : Threads are laid side by side and a bobbin goes backwards and forwards, in and



out, two hundred times in a minute. If patterns are to be made on the cloth they are woven in with other threads. But sometimes the cloth is run through a machine which prints the pattern on it, almost in the same way as a newspaper is printed.

5

In the cotton mills of England and Europe, this seemingly simple process once crushed the lives out of the people who worked in cotton mills. Children of four to eight were employed for one copper a day at the job of quilling, which means winding the spun yarn. Boys from eight to twelve years got two to four coppers a day for spinning. At the age of thirteen, they got eight pence a day for weaving. Now the conditions in our cotton mills are better than this, because children are not employed. Still, however, the wages of the factory workers are very low, while prices are always rising.

Also, in many of our mills the conditions of the English mills of a hundred years ago still prevail. The mills are dark, crowded and unhealthy. The windows are often not opened. And the cotton fluff is a nuisance. Men and women are crowded together and work for long hours. The latest machines are not employed, because they are difficult to get hold of from abroad, where steel is being used for making guns for war. From this lack of planning for peace all over the world, the mill workers are badly affected.

6

So we see how far we have to go to improve conditions for the makers of cloth.

But, perhaps, we also have to become more wise about wearing clothes. First of all, we must wear clothes which are suited to the climate in which we live. Our ancestors in India wore fewer garments than we do. Because they thought air and sun very important for the body. Unfortunately, in the last two hundred years, the British Government ordered their clerks to wear neckties, coats and trousers. The Western idea is a little stiff, because Christians despised the naked body and wanted to cover it. When they saw our people wearing little more than a dhoti and kurta, they thought we were uncivilized. Actually, wearing suits and boots in our hot climate seems rather stupid. In all our history men wore loose flowing robes of linen and muslin and silk. And men's costumes were like full blown skirts. And women wore pyjamas or salwars. In Scotland men wear a skirt, called a kilt. So, as the wise English artist, Gill, put it: " The skirt is not specially a female architecture, nor the trouser a male." And, in fact, a naked man, or a semi-naked man, may look quite well dressed to us if we only begin to think about such matters.

CHAPTER SIXTH

THE SAVING STRAIN or DANCE, MUSIC and DRAMA.

1

A great English writer, Mr. H. G. Wells, once wrote a book called *The Time Machine*. And, through this we have got used to the idea that we can sit in a time machine, even as we sit in a motor car. Then we put it in gear. And it takes us back many thousands of years into prehistoric times. We have been doing this throughout the previous chapters.

Now, if we do the same thing again, we may arrive in the middle of a jungle. And we will find those hairy, ape-like ancestors of ours, stamping about in a weird, heavy, crude, rhythmical movement around the fire. As they move, they mark the beat of their feet, with their cries, grunts and growls. They have not yet learnt to speak in words, to chant or to sing.

What are they doing, you will ask, stamping around the fire in the forest?

The answer is: they are doing magic. They are casting a spell on everything around. They feel that if they move about like that and grunt, the animals, the air and the water will become frightened of them. May be they have the same impulse as we have when we whistle in the dark to conquer our own fears.

As you know by now, these earliest ancestors of ours were mainly hunters. They had to kill the wild beasts for food or be killed by them. At one time, they used to kill with their hands and their teeth. Then, you might remember,

they made axes and other weapons. But, at the same time, they seem to have invented another weapon, a kind of secret weapon. They began to put on the feathers and skins of the animals they hunted. Somehow that made them feel strong. Because, they felt, that if you imitate anything you get power over it.

So that before they went out to hunt, they would perform a mime of the hunt. Some of them took the part of the hunters. And the others pretended to be the hunted. In this mime the hunters always won.

The real animals could never have been affected by this kind of magic. But our shabby ancestors were affected. For they began to believe that they would succeed in killing the animals during the real hunt. And to believe is to win half the battle.

After some time this mime became a habit. And the gestures, movements and sounds of the hunt, took the shape of nice patterns. These patterns did not copy the chase closely, but mirrored it sufficiently to seem like the real hunt in its own way.

The idea of this magical spellbinding survived into later times. And it seems to have become habitual to perform it whenever the men were going to do something. For instance, when they sowed the seed in the field, they made rhythmical movements and chanted magic spells, asking the rain to come down and the sun to shine for the crops to grow. They believed that everything was alive in the same way in which they were living and breathing. And they seemed to sense a spirit in everything. In our old books, the *Vedas*, there is the Thunder-god called Indra, the Sun-god called Surya, the Storm-god called Rudra. In fact, every river and tree and mountain and animal, has a spirit behind it. In the same way we talk of fairies, fauns, hobgoblins, ghosts etc.

This spellbinding was the beginning of all the arts—dancing, music, drama, poetry, painting and sculpture.

And dancing is the mother of all the arts.

2

It is not possible precisely to trace the growth of dance forms from the magic spell to the ballet, as it is danced in the West today. But we do know enough about the dances of primitive tribes, many of whom still live like our ancient ancestors. And thus we can see the development of this art to some extent.

For a long time, dance seems to have remained the mime of the hunt, and the ecstatic expression of the desire for good harvests. And, already in the remote past, the primitives formed lovely patterns by arrang-

ing themselves in geometric lines as they danced on any given space. Also, the grunts and the growls soon became repeated refrains of songs and music began. We can see in our own old dances, like the Bharata Natyam and Kathakali, how intimately songs accompany dances and how complex and subtle are the gestures and movements. The hands of our dancers open delicately like lotus flowers and the eyes can show all the moods of love and jealousy and hatred. It is possible, then, that dance and music grew together.

It is likely that for a long time the physical needs and urges of the growers of corn, the sowers and the reapers, the carriers of baskets and the cutters of wood, became allied to mime. The Gonds, the Santhals, the Nagas and the Banjara folk dances express the life of these people clearly in rhythmic movements.

But like ancient poetry, the mime does not merely imitate life. It recreates it, with an element of fantasy. This element is made up of many strains of feeling, joy, sorrow, triumph, hope, fear. These emotions and aspirations seem to become vital, specially when many dancers join together and express one mood, to the beat of drums and voices. Thus the fantasy part of the dance is not something alien to life, but intimately of it, being expressed in movements of men together as they hunt or till the soil.

Though the essence of dance is movements, the styles of dancing developed differently in every country. The climate of each land, the tools used in growing corn, as well as the clothes worn and the language of the songs, all helped

to evolve individual and unique ways of expression. For instance, some movements are clear imitations of an ordinary act, like the scything movement in our Pahari dance. In other dances the symbols are more indirect, as in the Santhal dance, where men and women come towards each other, as though to embrace each other. But, in all folk dances, we can still see the spellbinding, as when the dancers strike the earth hard with their feet to make it obey their will.

3

As the old tribes settled down in big villages and cities, the styles of dancing also changed. The old forms of dances were still present, but they were given new meanings and became more complex. The exaltation of God Siva to Nataraja, king of dancers, in ancient India, had a deep meaning. Our sages thought that man is born and reborn in this world, and the process of life is kept going by the Supreme Lord through his cosmic dance, as though the whole world is a great god dancing.

If you look at the picture of Siva dancing, you will understand the meaning of the hymn which describes his symbols:

" O my Lord, Thy hand holding the sacred drum, has made and ordered the heavens and earth and other worlds and innumerable souls. Thy lifted hand protects both the conscious and unconscious order of Thy creation. All these worlds are transformed by Thy hand bearing fire. Thy sacred foot, planted on the ground, gives an abode to the tired soul struggling in the toils of causality. It is Thy lifted foot that grants eternal bliss to those that approach

Thee. These Five Actions are, indeed, Thy Handiwork."

4

The coming to be of villages probably gave birth to ritual dances in the temples. These led to the recitation of words as chants and stories. From these, later came the drama. The two epics *Ramayana* and *Mahabharata*, were probably recited by priests, while the action was performed by dancers and actors. The *kirtan* in Bengal shows that this kind of primitive dance drama was current in most parts of India.

But during the next two or three hundred years after the death of Christ, a highly intricate and elaborate dance art, as well as written drama, arose. And, in India, during the golden age of the Guptas, these arts were perfected. The complex gestures, moods and emotions which occur in plays and dances were analysed in the *Bharata Natya Shastra*, written before the fifth century A.D. This treatise shows that the arts of dance and drama were practised in India at least a thousand years before the book was written.

The foreign invasions of the country seem to have interrupted the tradition in the North. For, in South India, in centres like Tanjore, Bharata Natyam, as performed by the temple dancers, persisted. In this style one can see the whole beauty and range of the classic dance art of our country. And in the Kathakali dance drama of Malabar, which has survived until our day, we find an equally great art of dance-drama, expressive of every shade of emotion and mood.

The dance art of India also survived in Java and Bali, where it was adapted to meet new conditions by the Hindus who went to live there.

5

In China, the growth of dance, drama and music was similar. From the primitive double rhythm in the early dances, more complex movements were evolved. And so intricate became the technique that it was passed on as a craft from father to son in theatrical families. The drama and dance remained closely knit together and song was an essential part of it. So it is nowadays called 'opera.'

As the habits and customs of the Eastern people, as well as their religions, did not change very much for centuries, the old styles have continued till today.

In the last two hundred years the tradition was somewhat broken by the impact of Europe.

6

In the West, the art of mime and dance grew under different conditions into a highly complex drama.

The decline of the village, and the rise of the city, in Greece, led to the building of an intricate society. And this brought its own problems. In order to master these, the idea of a hero grew up. The hero-man brings new knowledge and skill. So he is opposed to old gods of nature, the powers and energies of the earth, and the other elements. He is Prometheus, who creates new techniques. The old gods chain him up. He defies them and struggles and suffers until he is released.

The Greeks had other myths and legends about their gods. These gods were mostly the symbols of the forces of nature, the unknown Fate, which helps or hinders man's life.

In all the Greek dramas, this unknown Fate, the forces of nature, affect men in their actions all the time. The characters seem destined to do what they do. And as the play unfolds, we are moved to pity and love, even as we see men and women in pain and torment. The Greeks had conquered everything, it seems, but they had not subdued certain unknown elements.

The great tradition of the Greeks travelled to Western Europe. Only the main ideas changed in the later periods. The Christian God was the helper and the Devil was the evil friend, making man do bad things. The plays performed in the churches, called 'morality plays', are all built on themes which bring out this conflict between good and bad.

Later, in the period of inquiry and knowledge called the Renaissance, the theatre began to deal with another 'Fate'. This time 'Fate' meant the hidden evil in men, as they fight other men. Shakespeare, perhaps the greatest dramatist of the world, wrote about man's conflicts with his fellowmen.

In the Machine Age, the 'Fate' changed again. Now, the known evils of the business life, of buying and selling, of money, began to dominate drama, as it influenced poetry and novels. And, from the sixteenth to the nineteenth centuries, some of the most wonderful dramas were produced.

From the fourteenth to the seventeenth centuries dance, music and drama remained mainly spectacles for rich people, mostly kings and their courtiers. The performers were either noblemen, or bands of dancers, and actors. And the ballet was as much dancing, as song and dialogue. But music had been progressing through the church and was to become highly complex. And, today, it is perhaps the greatest contribution of the European peoples to the world culture.

In the seventeenth and the eighteenth centuries, the ballet matured rapidly, specially through the work of a man called Noverre. He thought that this art " has remained in its infancy only because its effects have been limited, like those of fire-works designed simply to gratify the eyes. Although this art shares with the best plays the advantage of inspiring, moving and captivating the spectator by the charm of its interest and illusion no one has suspected its power of speaking to the heart."

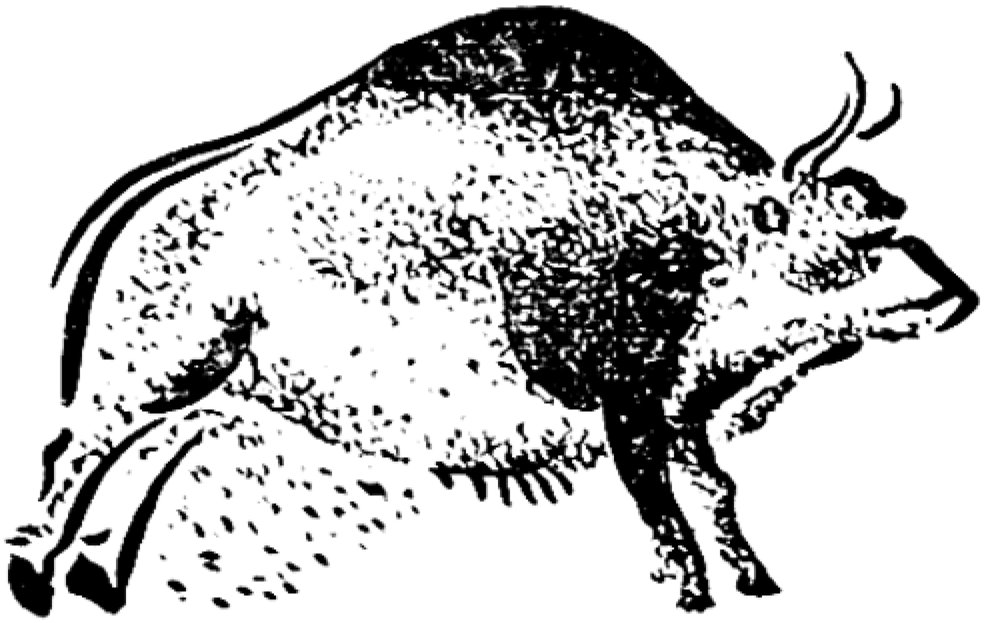
From then on, in the course of the next two hundred years, we witness the arising of a new

art-one of the most fascinating arts of the world. In Italy, Russia and Western Europe, beautiful dance creations were presented by many men and women of genius. And this fascinating form of art continues to grow richer than ever before.

7

Perhaps, in our country we shall have to take on the technique of the West in theatrical production and mingle that with gestures derived from our own tradition. Also, we may have to evolve new gestures to express our new life and its new rhythms. And then we may have a new art of the ballet, music and theatre. Meanwhile, we must remember the words of Noverre who said: " A well composed ballet is a living picture of the passions, manners, customs, ceremonies and habits of all nations of the globe. Thus it must be expressive in all its details and speak to the soul through the eyes."

This applies to all the theatrical arts.



CHAPTER SEVENTH

THE SINGING LINE, or THE POETRY of MAKING HOUSES, PICTURES and STATUES

1

If we again get into the Time Machine, which we used in the last chapter, to go back to the past, we might go into one of those caves in the hills, where lived the earliest men. In these ready-made houses of thousands of years ago we will find all kinds of things, tools of stone, horn and bone, and roasted limbs of animals left from the cavemen's dinner of long ago. And, on the walls of some of these caves, we will find pictures of bulls and reindeers, horses and birds.

These pictures are, of course, magical. The arrows which are drawn on them, as though piercing the animal, show that our remote ancestors tried to kill the animals before the hunt, even as they pretended to kill the beasts in the time of the hunt. Thus the earliest drawings and paintings, like the earliest dance, drama and music, arose from the instinct to muster the necessary courage to hunt for food.

Later, this instinct seems to have grown into the urge to create things for the sheer joy of working and doing things.

And, later still, there came to be some division of labour. While the stronger men of the tribe went to hunt, the more delicate and gentle people made things for which they had special skill.

Whatever happened, the images of things, which we find scratched on the walls of the caves, are very sharp and vital. The magic spell picture, which could control the sun and the rain and bring good harvests or help in the hunt, had to be wonderful. For it had to inspire the cavemen to do all these things successfully. It is likely, that, apart from the skill acquired by early man, he brought a new faculty to his work, the power of imagination. This transforms the mere likeness of a thing into more than the likeness of that thing. The picture of the image arouses a deep feeling in the onlooker. It moves him, until he remembers things through the picture of the image. The lines are so vivid that they almost seem to sing.

The pictures found in the prehistoric caves in the Mirzapur district of Uttar Pradesh, or in the Altamara caves in Spain, and elsewhere, show an extraordinary instinct in the early man for catching the movement of animals, as they run or kick or as the spear goes into them.

Some of the caves, in which these pictures have been found, are very dark. Therefore, the colours used on them are bright red and yellow or ochre brown. Obviously, these colours were made from powdered stones. This was put on a flat stone and mixed with some grease. The brushes were made of soft bristles of the hair of squirrels, even as they are made today.

2

At the end of the ice ages, when man left the caves and began to build houses of grass or skins or bamboo, and mud, the pictographs also changed. In the old days, far more than now, men built houses or painted pictures and carved wood or stone, in the materials which they could easily find around them. And it is in the decorations of the house with daubs of paint, or in the building of the bigger house, the temple, the abode of the gods, that what we call art has flourished in human history.

Let us then look at the way houses were built.

3

Apart from the caves and hollows of earth, and trees, houses were built in our country by making a tent-like frame from thin tree trunks and branches of trees. The outside of the frame was covered with shrubs and leaves and bracken. This was held together with plaster, mud or clay. In thousands of villages, such huts are still built. In different parts of the world, according to the climate these huts were either round or oblong or square. The biggest hut belonged to the chief and its walls were plastered and coloured red or yellow, and patterns in white and red were painted on them.

When man progressed 'from the food-gathering to the food-growing stage, he began to live in villages. As you have seen in the earlier chapters, the earliest villages were in the great river valleys of the Nile, the Euphrates, the Tigris, the Indus, and the Howangho. There were not many forests in these parts, and wood was scarce. But there was plenty of mud. So men chose to live here.

In Mohen-jo-daro and Harappa, we find that mud was used for building walls and for making bricks. In Susa, an ancient site in Mesopotamia, mud was obviously used for a wall around the village.

It seems that river flats were found not to be so good for building, because of the danger of floods. So men found a method of digging the mud from the river's edge and shaping it into oblong blocks which were left to bake in the sun's heat on the banks. These were the first bricks.

Later, both the Indus valley people and the builders of Babylon, learnt to fire or bake their bricks, in order that these could last longer against the bad weather. And they stuck these burnt bricks together with mud or slime and a kind of pitch. The complex structure of Mohen-jo-daro, and storeys of the palaces of Babylon, show that we have not advanced very far from them in the ability to build good houses which would suit our climates. And some of the pots and pans, and clay or metal figures, made by these ancient men are of surpassing beauty. And the pictures they drew on the pots, or on the graves of their dead, prove that the men of these civilizations were possessed of fertile imaginations.

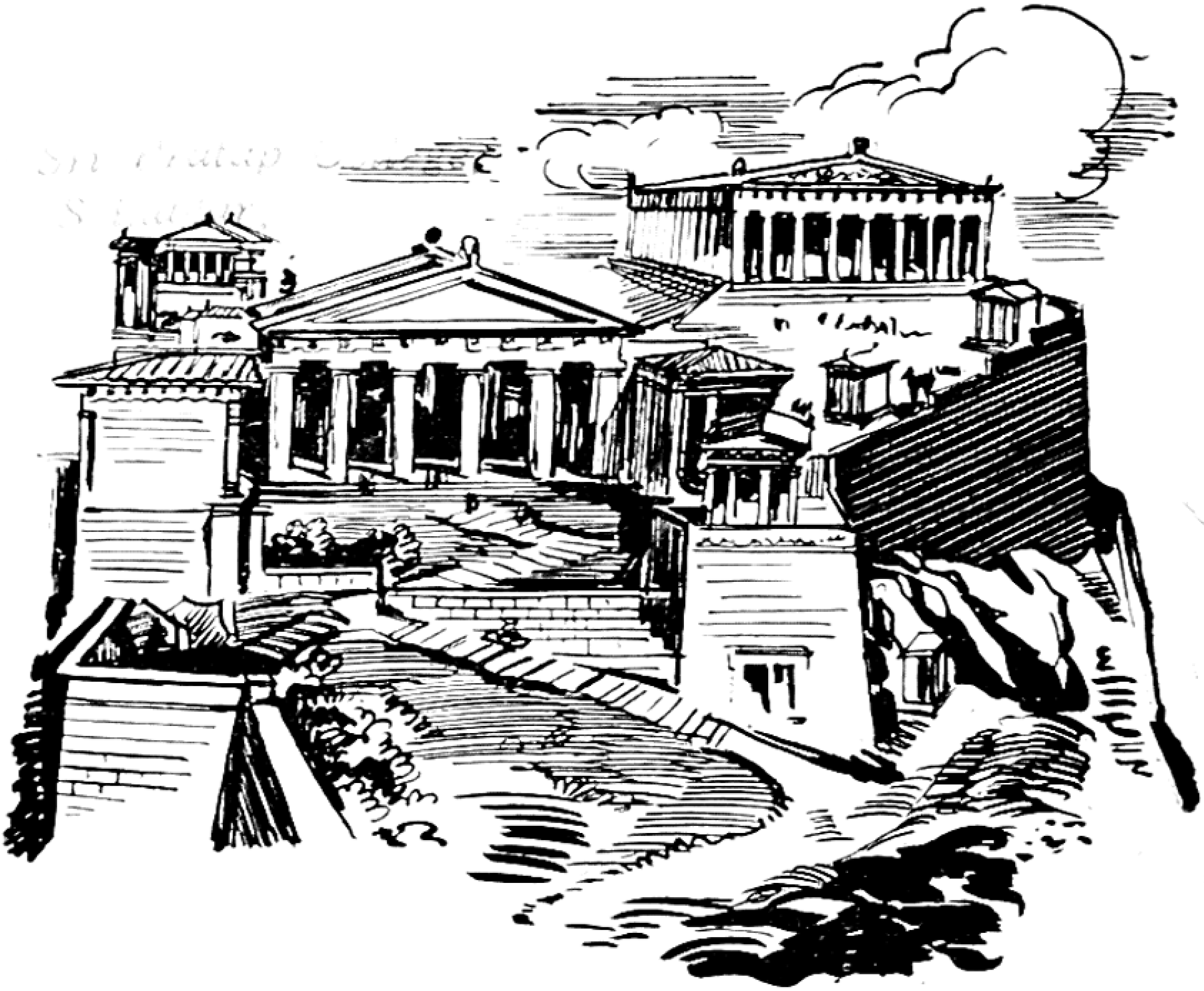
4

The temple, or the house of the gods, in our country, was built mainly on the design of the peasant's own house. Even today, in each great shrine, you will find that the inner shrine is a square room, around which are various courtyards. The use of stone in the temples created its own forms. The builders did not want to leave the stone house just like a block, but smoothed its rough edges and carved on it the images of the gods to whom the temple was dedicated.

As in our country, so in Egypt, Greece and Rome and in China, great temples were built.

One of the most famous of these temples in

Greece is the Parthenon. It was a temple in honour of the Greek goddess, Athene. The name of the capital of Greece, Athens, is derived from her. In its massive ruins, which look down from the hills on Athens, there are many statues and carvings that once decorated this wonderful structure. Many of these statues were to give inspiration to the sculptors of later times.



For instance, the Romans, who conquered the Greeks and ruled over almost the whole of the then known world, were spiritually conquered by the Greeks. They copied Greek buildings, and learnt to sculpture in the Greek way. Their buildings were plainer than those of the Greeks, but they were solid. The Greeks had used flat slabs of stone and beams of wood as roofs. The Romans invented the arch. The arch looks very simple. But if you see how the stones push upwards, sideways and downwards, without coming down, you will find that it is difficult to build something which can support a huge weight. Our own ancestors in Buddhist times helped to show the way by making domes. And the method by which the dome has grown, as it is in the Church of St. Peter in Rome, or in St. Paul's in London, is a fascinating development.

As the men of Mohen-jo-daro knew how to make public baths and *hamams*, so the Romans knew how to heat buildings by means of hot air from a furnace. In this kind of heating, the hot air passed through earthern or stone pipes. And, like the old Indians, the Romans knew how to build tanks and supply water to the bathrooms in every house.

The earliest houses were on the ground floor only, as they are in many of our villages

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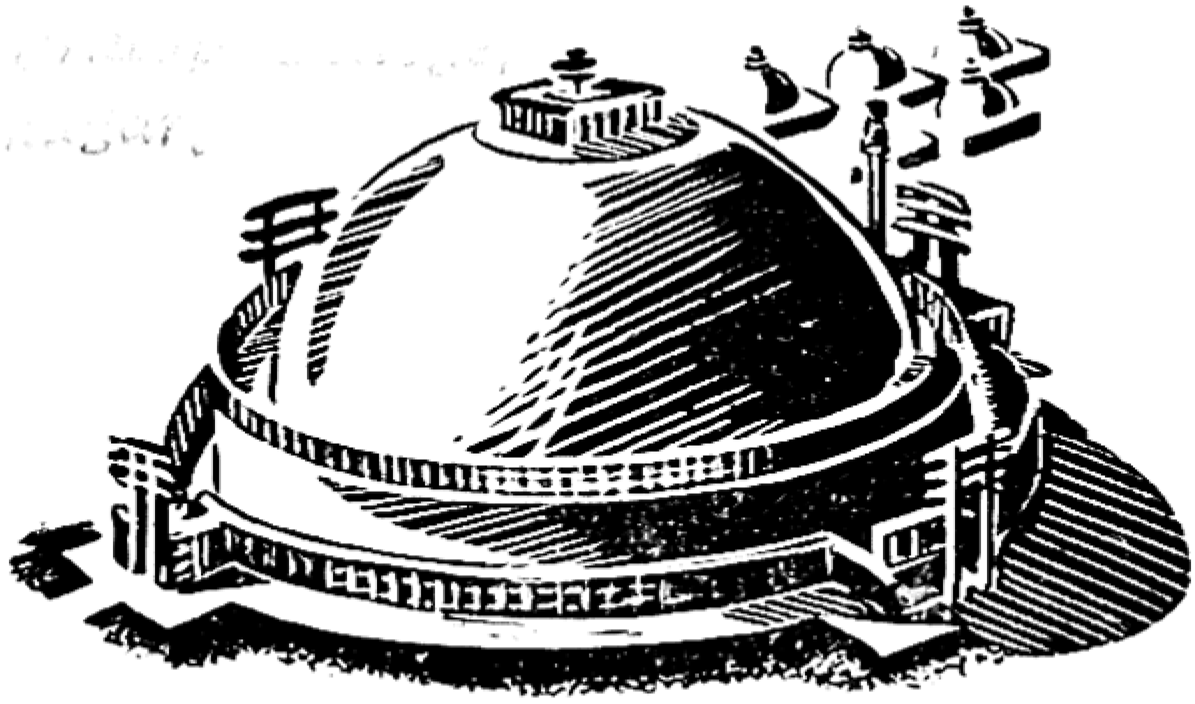


now. Later, however, as population grew, and towns were built, men began to construct upper rooms, until, nowadays in New York and Moscow, they build houses many storeys high, called sky-scrapers. Thousands of men can thus live in one house. Similarly, the bamboo steps used for climbing gave place to wooden stairs, then to stone stairs, and now to electric lifts, which take you up as though on a magic carpet. The making of windows, chimneys and other conveniences, has also developed through the centuries. Climate is one important consideration in this matter, materials another. And the genius of many builders, like Wren, who rebuilt London after the great fire of 1666, has spent itself on evolving the house and the public buildings and the well-planned town.

5

Similarly, there have risen men in world history, who had special skill in the handling of paint and in carving stone and modelling clay. There were giants like Leonardo da Vinci, who could not only draw beautiful pictures, expressing the deepest feelings of men, but who invented new sciences. The balloon, which was to become later an aeroplane, was first thought of by Leonardo. He also dissected dead bodies to find out the difference between each muscle. And he gave a touch of reality to the art of painting and sculpture. Other great men learnt his lessons. They continued to extend the techniques, of putting together groups in large pictures, which were mainly used in the service of the churches. They same energy was shown by sculptors like Michaelangelo, whose statue of Moses in Rome is a landmark in the history of art.

From Italy, where building and painting flourished actively during the period of awakening called the Renaissance, the torch was passed on to the other countries of Europe. Specially to France, where beautiful cities were built, like Paris, and the Palace of Versailles and the Cathedral at Charters, and many great handlers of paint and carvers of stone flourished. Each contributed something new from his own vision to the delineation of the moods and emotions of kings and heroes and ordinary men. And with each period, the lessons of art gave more and more happiness to struggling men. Even now the artists of France remain the teachers of artists all over the world.

Until about two hundred years ago, painting, sculpture, wood work and iron work, were part of architecture. But the spread of knowledge brought the need for men to do one job well. And the various arts began to be separated from each other. This was good in a way, because people could experiment in various forms and colours and styles of building and make their work deeper and more intense. Science, for instance, was to help painting greatly. Physics said that things look differently in different lights. So painters tried to put down surface impressions of the play of light, with daubs of paint on their canvasses. Later, the French artist, Cezanne, tried to pierce the solidity of things behind the outer light.

6

The unity of architecture and the other arts is far more obvious in our own country.

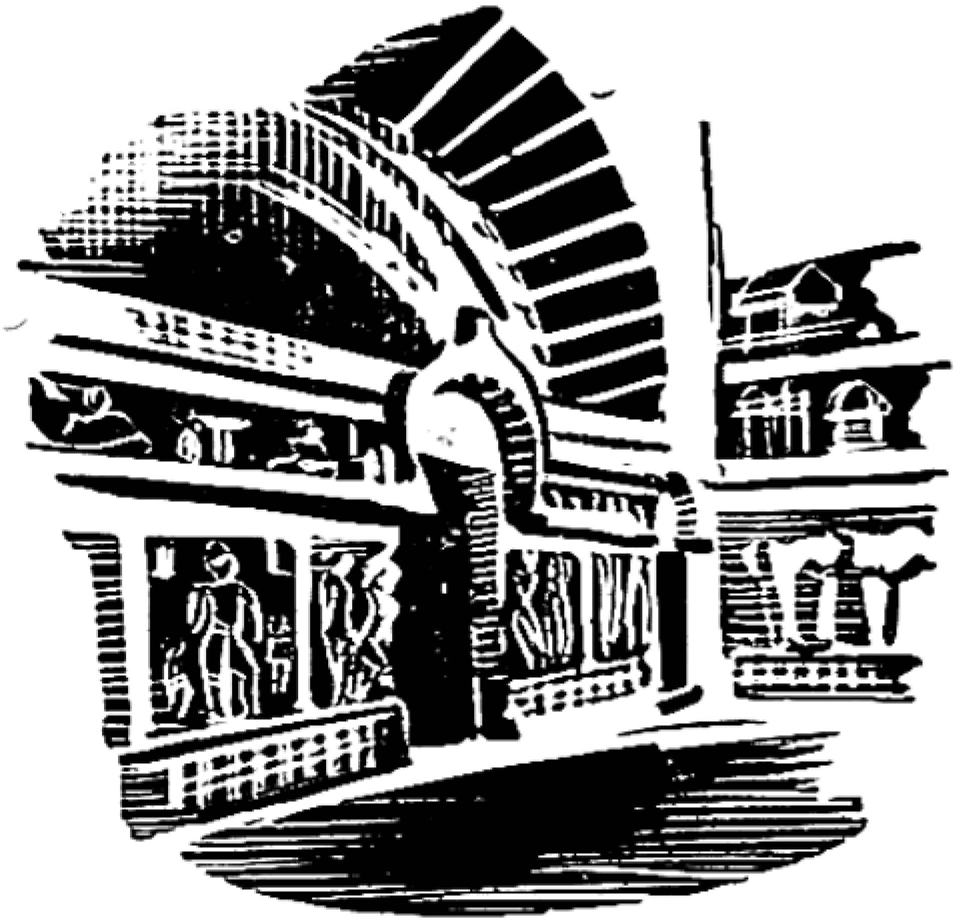
Already, many centuries before Christ, building, which is the laying of brick upon brick and the putting of stone upon stone, had given place to architecture, which is the poetry of building. And in the cave temples of Karla, Bhaja and Bedsar in Western India, we see that sculpture and paint were used to create the atmosphere of calm that the Buddhist monks, who carved these rocks, wanted around them.

The lovely patterns of birds and beasts and animals and gods, which our peasants draw on the walls and doorsteps of their houses today, show that the magic rites by which the hidden energies are conquered through rhythmical expression have survived almost intact. In the absence of much evidence, we can guess from these folk designs, what the wall paintings in the palaces and temples were like. And, of course, we have a few monuments like Ajanta and Bagh, which show that many of our old artists were masters of life and knew how to reveal it in images. The walls of the rock-cut temples are covered with pictures of kings and queens and dancers and peasants and saints.

The rich society of that time is reproduced in the wall-paintings in such a way that we can sense the very ecstacy and beauty of that time.

The foreign invasions, and the internecine wars of the later periods, destroyed much lovely art work. But enough remains of the temples, cities and tombs of the later eras to show that the quick of the Indian imagination was always present wherever there were plentiful harvests and good government. The gopurams of South Indian shrines, the carvings of the rock temple of Ellora, the Kutub Minar, the red sand stone city of Fatehpur Sikri built by Akbar, the Great Moghul, the lyrical paintings of Ustad Mansur and other painters of the court of Jehangir, the tomb of Humayun in Delhi, the beautiful palaces of Ahmednagar, the delicate splendour of the Taj Mahal, and the glory of the Red Fort, all startle us into a sense of wonder at the skill with which men have worked in our ancient land.

In the eighteenth and in the early nineteenth

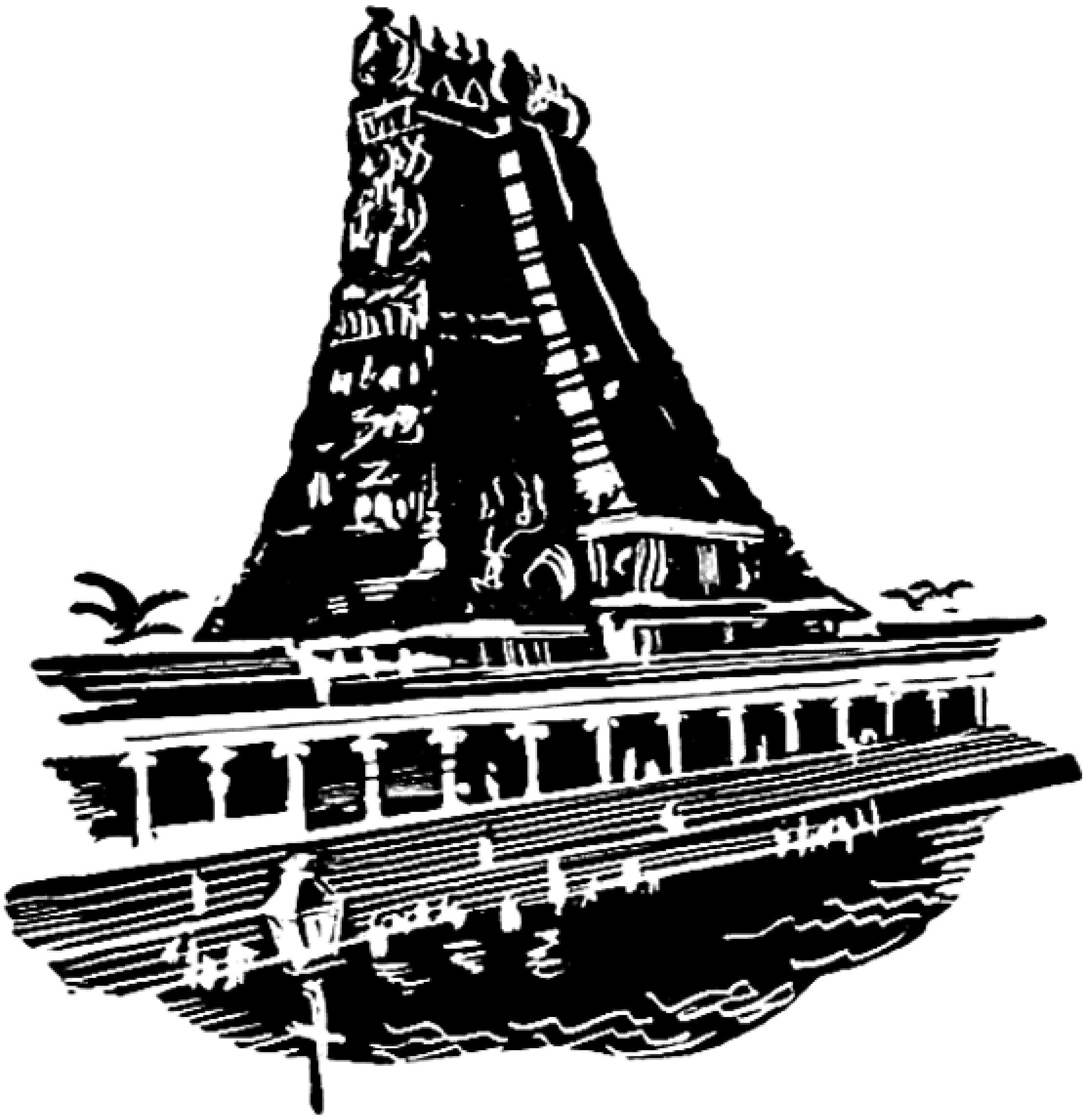


century, our ancestors were still building beautiful palaces, designing lovely gardens and enjoying their leisure by looking at the wall paintings around them, or at albums of portraits and miniatures of joyful scenes. And it is surprising how our people have gone on creating these and other wonderful things and struggled to live the good life in spite of long periods of foreign domination.

7

The danger that faces us, as well as other people in the world to-day, is that the machine, which makes miracles and produces so many things quickly, is taking the place of the hand everywhere. This takes away the opportunity from men to please themselves in their own way by making things with their own hands in their spare time. Actually, in spite of the fact that we can produce almost anything with the machine, we have still so little leisure to enjoy ourselves. Thus the urge in man, which has always made him a creative animal, who invents things and puts his feelings and thoughts into them, has begun to be suppressed. And it is well known that if the vitality and rhythmic flow of man is arrested, he turns to destruction and threatens to wipe out all that other men have created with such love and care.

There is another thing we must remember: Because the machine-made toys, as well as pictures, are often so bad, some artists retire into themselves. They begin to paint pictures for themselves, or for a few of their friends, who understand their minds. Thus they begin to despise the common run of men. On the other hand, the factory workers and poor



people, who had no time to learn, begin to like only coloured photographs of film stars and political leaders. The retreat to the dark corners of the soul, away from the real life, is as bad as the lazy photography of things. There can be no art unless man realizes his emotions and conflicts and tries to express them from his heart and his brain. There is so much misery and pain in our world today. And it is so easily possible to achieve the good life. And art can show how man can conquer difficulties in his way and create a rich life. And thus the makers of houses, the painters of pictures, and the carvers of stone, can help us in the struggle to be happy and to be truly human.

CHAPTER EIGHTH

WORDS—WORDS—WORDS—WORDS and THE NEED for MORE WORDS

1

The American poet Hawthorne once said: 'Our speech or language is but little better than the croak and cackle of fowls, and other utterances of brute nature.'

But no one quite knows how words began to be spoken. And there are various guesses about this question.

Mr. Hawthorne's theory is called the 'Bow-wow' theory. A dog barks. He seems to be saying bow-wow. So man begins to call the dog, bow-wow. The difficulty with this idea is that what cock-a-doodle-doo is to an Englishman, chicchrichi is to an Italian.

Then there is the 'Ding-dong' theory, which suggests that there is some connection between sound and meaning made by God. As not everyone agrees whether there is a God or not we are no further with this explanation.

The 'Pooh-pooh' theory says that language came from shouts of wonder, fear, pleasure and pain. This idea is very near the 'Yo-he-ho' theory, that words came from the grunts and growls which early man made in lifting weights.

The 'Yo-he-ho' theory is very near the 'Sing-song' theory. This says that language arose from primitive magical charms, used in the hunt mime.

And there are various other theories : That language comes naturally. Or that it is a convention, invented for the purpose of telling lies.

One thing is certain. While dogs have been barking, cats mewing, donkeys braying, and lions roaring, in the same way for generations, men have been talking differently and their languages have been changing in different places. This is because language is really an expression of man's work. As human activity changes all the time, language changes with it. When people stay in one place, the change is less. But if they wander about, then new words and new ways of speaking are found. And of course, with the passage of time, words change their meaning greatly. For instance, our ancestors spoke Sanskrit, but we can hardly understand it and speak broken Hindustani.

Even if we agree that the grunts and the growls and the sing-song of early man grew into chants and words we cannot reckon the time it took for real words to be spoken. And tens of thousands of years must have passed, before the first appearance of written language.

2

The first records of any language seem to have been found at Mohen-jo-daro, and in Sumeria, between the Tigris and Euphrates valleys. Perhaps, both these civilizations flourished, about four thousand years ago and were connected in some way.

The next records are of the language spoken by Babylonians and Syrians, dating to about 3000 B.C.

Then we come across the written characters of Egypt and China, which go back to about 2000 B.C.

After these beginnings, the records come thick and fast. And we see how the parent languages are breaking up into different dialects and forms of speech, known as 'daughter-tongues.'

Let us look at some of the earlier scripts.

3

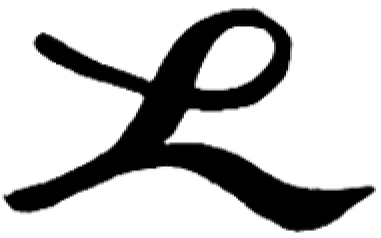
When we come to see how man can write down the sounds he makes, it all seems very wonderful.

At first, he seems to convey what he wants to say by signs, which he scratches on stone or clay or trees. These signs were not spoken words, but conveyed an idea. For instance, when you see an arrow sign on the traffic post, you do not think it is a real bow and arrow held by a hunter. You merely think that the arrow is pointing the way in which you should go. Again, if you see the picture of a hand on the road, you know it means stop and not merely a picture of the hand. It seems that long, long ago men conveyed their meanings by such signs and pictures.

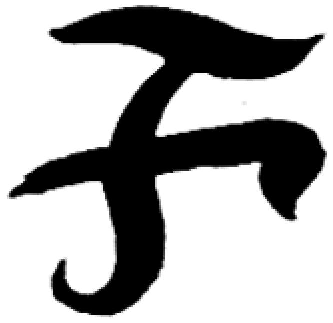
The ancient Egyptians used pictures to convey their meanings. But as there is no Egyptian to teach us what the ancient Egyptian speech sounded like when spoken, we can only guess at the meaning.

The Chinese picture signs are a little more easy to understand even though these symbols have changed from real pictures to abstract forms in present-day Chinese writing.

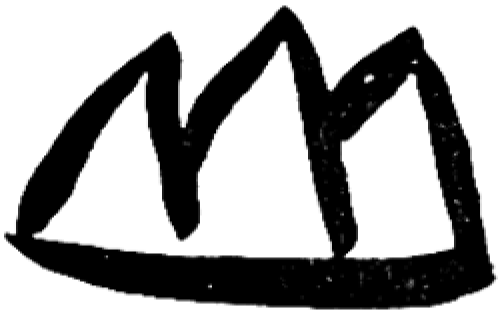
This is what the picture of a child used to be like.



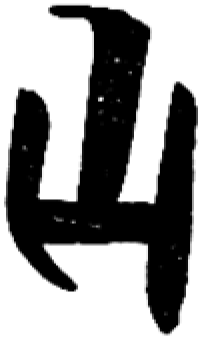
Now it is like this.



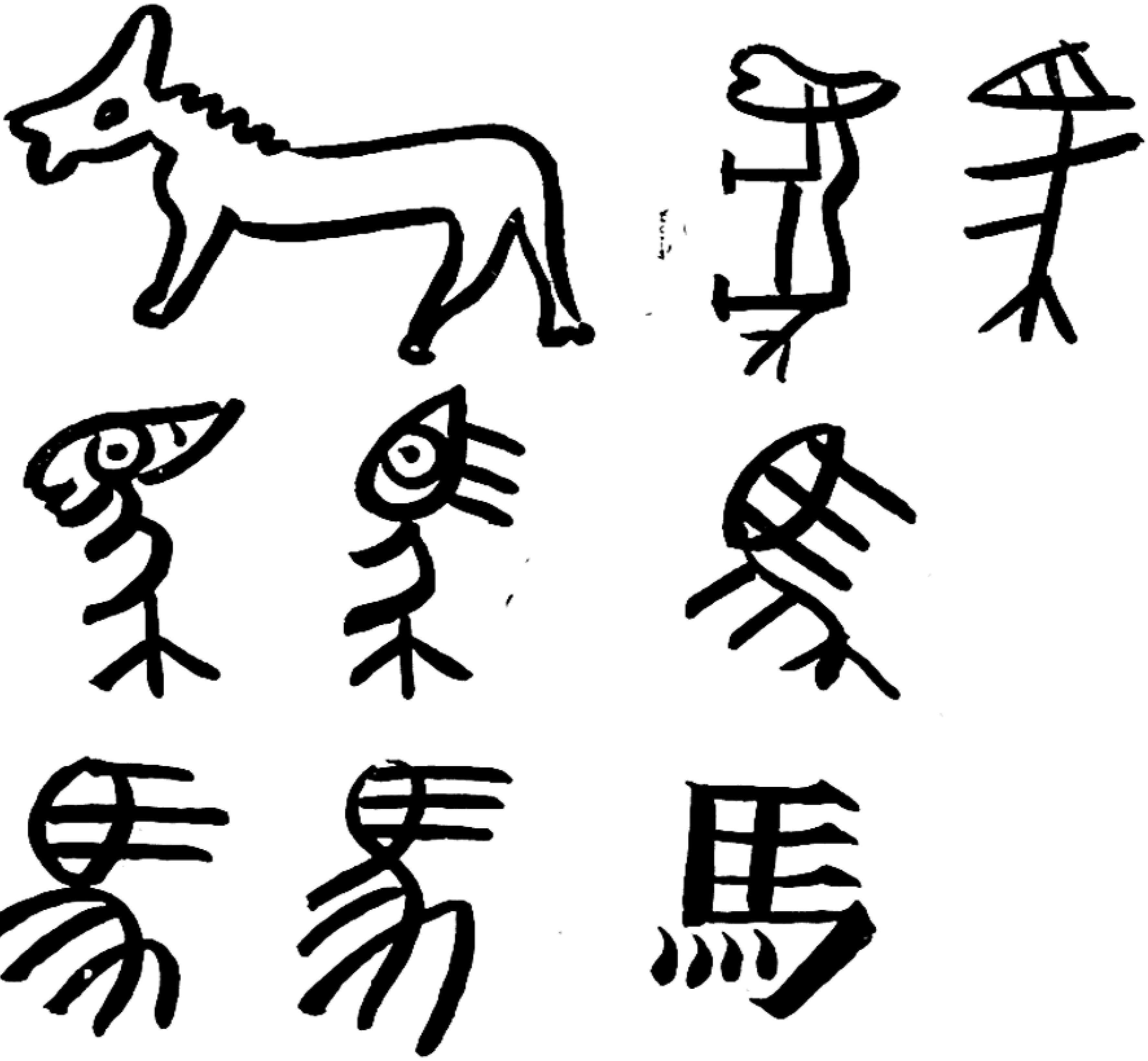
In the old days the mountain was like this.



Now it is like this.



This is how the word 'Horse' was written in Chinese in the old days and how it is written now.



This kind of writing is called by the big Greek word, Ideograph, which seems to mean idea-writing. For the symbol here stands for an idea and not for the sound.

Now our way of writing is quite different. We write the sound or a spoken word. And we use letters which have a fixed sound, but no meaning of their own. This writing is called phonetic or sound writing.

So every letter we have learnt to use has a long and fascinating story behind it.

4

Apart from the languages, which are now dead or unspoken, the oldest languages of which we have no definite knowledge belong to what is called the Indo-European family. It seems that certain tribes travelled from Central Asia in various directions. They are called the Aryans. Some of them went towards Europe. Others came to India *via* Iran and the shores of the Baltic Sea. The Indo-European languages are Sanskrit, Greek, Latin and Pehlvi. There are many common words in these languages. Some of these words are for snow, birch, billow and pine, horse, bear, hair, wolf, copper and iron. This would seem to suggest that they lived in the copper-stone age, about 2500 B.C.

The time lag between the speaking of words or singing of chants and the writing of these on paper, is clear from our own history. For

while it is certain that the hymns in our *Vedas* began to be sung a long time ago, they were not written down till much later. They were only passed on from father to son and son to son, by rote. Still some of the oldest recorded writings are the Vedic hymns.

5

"If I were asked," Pandit Nehru has said, "what is the greatest treasure which India possesses and what is her finest heritage, I would answer unhesitatingly that it is the Sanskrit language and literature and all that it contains."

This is indeed true. Because, if we think of the wonderful thoughts which our ancestors put down in the early books, at a time when the people of Europe were in their infancy, we can be justly proud of our heritage.

What is this heritage?

It is in the lovely lyric poetry of the *Vedas*. It is in the wise sayings of the *Upanishads*. It is in the grand sweep of the epics, *Ramayana* and *Mahabharata*. It is in the portrayal of emotion and mood and character in the classical drama of Kalidasa, Harsha and Sudraka. All these taught our ancestors how to live.

The early poems in the *Rig-Veda* are rather simple. It seems that the tribes who sang them came face to face with the dread powers of nature, storms, high mountains, fire, and dense jungles full of trees. They thought that each of these things had a spirit behind it. So they imagined all kinds of Gods, like Rudra the god of storm, Indra the god of rain, Agni the god of fire, Surya the sun-god. And they invoked all the gods to help them to grow good harvests, and they offered prayers and sacrifices to the spirits. Later, in the *Rig-Veda*, and in the *Sama*, *Yajur* and *Atharva Vedas*, they began to ask more profound questions. Life was becoming complex and many difficulties arose. So they tried to solve these difficulties by making guesses and thinking, solving what is called the riddle of existence. You might remember that the ' Hymn of Creation ' goes very far in probing the mystery of life in this Universe.

From the *Upanishads*, we find that the tribes having settled down in villages seek to arrange their relations with each other. So they seek to sort out their relations with the gods. And, after much discussion the idea of a single supreme God emerges. He is the God of all the other gods. And the world is explained in this way. There was once One Supreme God, Brahman. In him arose the desire to create many things. So the whole Universe, and the human beings in it, came to be. And as, through his desire to be Many, all the different things in the world came to be, so there is a desire in all beings and things to become One with the Supreme God.

nice

This simple yet subtle idea has dominated the minds of Hindus for nearly two thousand years. Of course, the theory has been changed in many ways. But it is in almost all Sanskrit writings.

While these great books, the *Vedas* and the *Upanishads* and the epics were being sung and written, the Aryan tribes were fighting the original Neolithic inhabitants. After conquering them they organised the village life according to what is called the caste system. The elders of the tribe, who were priests, came to be called Brahmins. The younger fighting men and warriors were called Kshatriyas. The merchants were called Vaishyas. The menials were grouped as Sudras, this last caste being formed mostly of the conquered peoples. The division was first based on colour, because the Aryans were fair skinned and the Dravidians were dark. Later, it became a division of labour. And it helped to create a new society. But, after two hundred years, it began to create difficulties. For the priests looked down upon the lower castes.

At that stage arose two men, Gautama and Mahavira, who did not like the cruelty with which the higher caste men treated the lower caste men. And they both said that all men are brothers. And both these sages were full of tenderness for every living thing, including animals and plants. And they taught that no one should hurt any other living being.

As the priests had made Sanskrit more and more difficult, the ordinary people talked in dialects called Prakrits. Gautama and Mahavira spoke to the people, in the Prakrit languages which they could understand. And thus the people's languages grew. Hindi, Bengali, Gujarati, Marathi and the other languages which we speak and write today, were formed in this way.

But, of course, Sanskrit was the language in which many books about gods and men were

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written. These have come down to us. And we find there is no part of man's life which was not discussed in the great literature of our country. And some of the writing is the loveliest in the world, equal to all the beautiful literature written in the other world languages.

The pageant of writers and thinkers of China is as long as ours. But we do not know much about the old books. Like faint shapes these great men appear in history, almost like figures in a wall painting. From legends and stories of China's past we know of some of the ancient sages. For instance there was Yao, a philosopher king. Then there was his successor, Shun, who is said to have been a kind ruler. Again there was Yu the Great, who controlled floods and founded a dyansty of

kings. And there were other men whose thoughts were put down in poems and wise sayings.

We know of this long past of China, however, mostly through the sage Confucius, who lived from 551 till 479 B. C. His real name was K'ung Fu-Tzu. And he is commonly called the ' Master,' because the wise things he wrote in his books were the holy books of China until recently.

Confucius thought very highly of man. And he tried to write down how one should

behave with other men. He was friendly with princes as well as with ordinary men. And he talked to every one about big things and small. He felt that man should be simple, sincere and truthful like nature. And he considered all the Chinese people to be the children of the Emperor, who himself was considered to be the son of God. That is why the Chinese emperors continued to rule for thousands of years.

The second sage of China, who followed Confucius, was Mencius.

But even earlier than Confucius lived Lao Tze. This sage also taught that men should follow nature. But he spoke in fables, which show that he had some deep thought to put forward. For instance when he mentions the wild animals, the rhinoceros, the wild buffalo or the tiger, he considers them as symbols of danger, from whom man can be saved by Tao, which is a mysterious power. Lao Tze and his followers influenced the thinking and writing of the Chinese people as much as did Confucius.

But a great deal of lovely poetry was written later by sages who loved life for its own sake. There are hundreds of these poets. The most famous of them were Li Po and Po Chui. They wrote their images with a strong sense of the earth in all its lovely moods.

The Chinese also began to write stories of heroes very early. One of these long novels, *All Men are Brothers*, is one of the first few early novels of the world.

The written language of China was different from the spoken language for a long time. But, in the last fifty years, the spoken language has come to be written. And many vital books have already appeared in this new tongue.

7

The third great language-stream of history flowed down in Greece. And Greek writing, like the Sanskrit and Chinese, shows how the ancient Greeks lived, felt and worked as they built their intense civilization. As I have noted, the Greeks founded their big cities with the help of hardworking slaves. So the thoughts of these peoples grew in the leisure which the ordinary people gave to the sages to sit around and think. We are not saying that merely because Greek civilization was built by slaves, therefore, the wise sayings of their sages are of no use. In fact, at that time, the men at the top, who ruled Greece and created the city-state, were as forward as were the Aryans who thought out the caste system.

The many wise men of Greece, Socrates, Plato, and Aristotle, have become legends all over the world. Socrates went about talking to people on life and its problems. And he spoke so truthfully that some people did not like him. His enemies said that he was misguiding the young. So they tried him in a court and made him drink poison. But the wise things he said were put down on paper, by his disciple Plato, in the form of conversation or dialogues. While, writing the thoughts of Socrates, Plato also wove into them many of his own ideas. In his works we see the differences between the ideas of the various Greek sages, on how the world began, how it grew and how men should live.

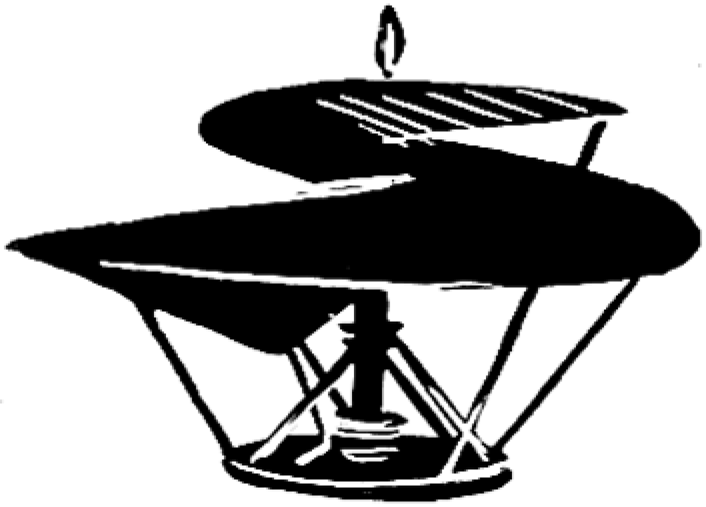
The greatness of these Greek sages lay in the fact that they were always inquiring, always asking questions and finding out new truths. This inquiring spirit is obvious in the words of the sage Hippocrates : " Our present mode of life is in my opinion the outcome of a long period of invention and elaboration . . . "

The thoughts of the Greeks, from Heraclitus, who believed that the essence of the world was fire, to Aristotle, who used the methods of science to find out everything, have become part of lives and thoughts of the men of Europe. And, today, the ideas preached by the ancient Greek philosophers and writers are respected by men, all over the world.

Another stream of language which is part of the Western tradition today is Latin, which grew up with the Roman Empire. Some of the greatest poets and thinkers of the world wrote in this language.

Until the middle ages, that is six hundred years ago, Latin remained the language of all countries in Europe. The Christian church, which used this language, was accepted everywhere.

But soon quarrels broke out amongst the Christians. Also, many men began to revolt against the orders which the head of the Christian church, the Popes laid down. So started the period of new light and knowledge, that is called the Renaissance. Among the foremost poets who helped this process were Dante and Petrarch. Whereas the monks used to go about with long faces, frightened of the hell to which they would be sent for their sins, according to the Pope, these new poets, wrote of love and of ordinary people and beautiful things. It was at this time that the story teller, Boccaccio, wrote his early novels, about the good and bad deeds of men. And while the old men went on hugging their pet beliefs, without questioning, the young began to leave the churches and lecture halls and to find out and say things based on facts.



The spirit of science was growing and man began to be master of the universe.

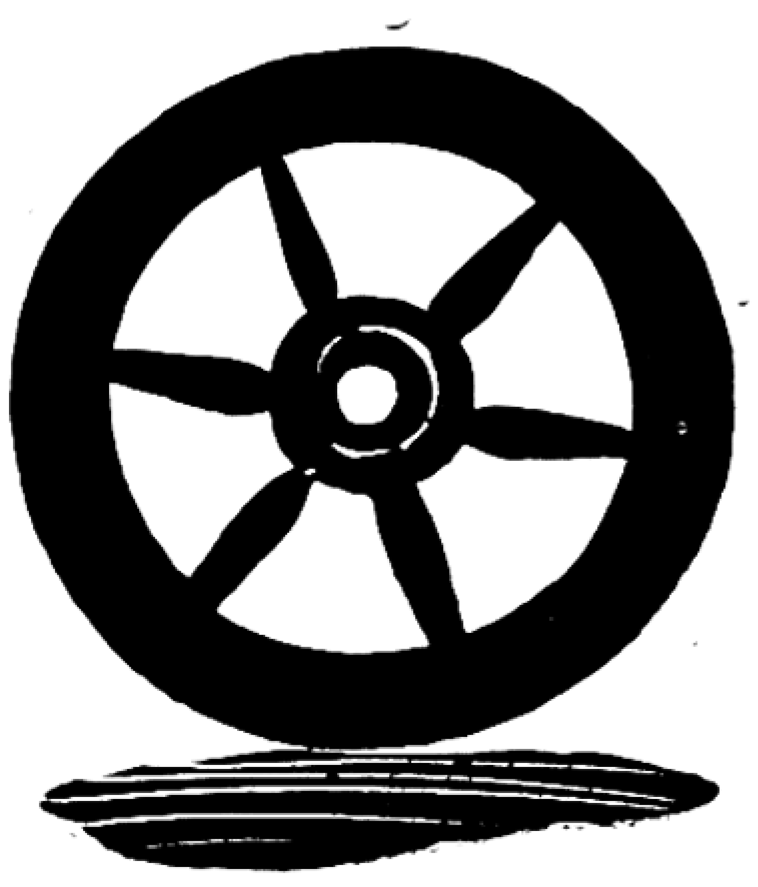
And with this new fire, man began to write books, paint pictures, experiment in laboratories or go on the high seas discovering what the earth looked like. Leonardo da Vinci was the kind of man who was a symbol of this new age. He wrote down his thoughts, carved stone, painted pictures, tried to invent aeroplanes and do everything that would take man forward. Columbus, who wanted to find the way to India, but instead found America, was another man of the Renaissance.

And the marvellous literature of the various countries of Europe, now began to be written, not in Latin but in the local dialects. The English poet, Shakespeare, expressed the impulse of the new life better than anyone else.

With the Renaissance, there was going on a movement called the Reformation. As the Christian church had become very powerful and did not allow men to think new thoughts, many brave men decided that though they were Christians, they could not believe in all the miracles which the Pope wanted them to believe in. So they wanted to make religion everyone's own private affair. A Dutchman, called Erasmus, began to attack the stupid and proud monks of the Catholic church, who lived well on the rich lands donated by the people to monasteries, but were really not good men. Erasmus wanted that the Christians should become more honest.

After him arose a man called Martin Luther, a German peasant. He studied the Bible and saw the difference between the words of Christ and the words used by the Pope and his bishops. He openly defied the Pope and began to be hated by the monks. In the quarrels that broke out, those who protested like Luther, became 'Protestant' Christians and left the Catholic church. The Pope's empire came to an end, and new, more reasonable attitudes towards God began to be discussed, often leading to wrangling, violence and war.

But the books of science and philosophy and poetry and drama and romance began to pile up, as well as new pictures, glorifying man. And much of this literature and art has entered into our minds and hearts, and made us what we are today.



CHAPTER NINTH

THE WHEEL OF LIFE
or
HOW THE MACHINE CIVILIZATION AROSE

1

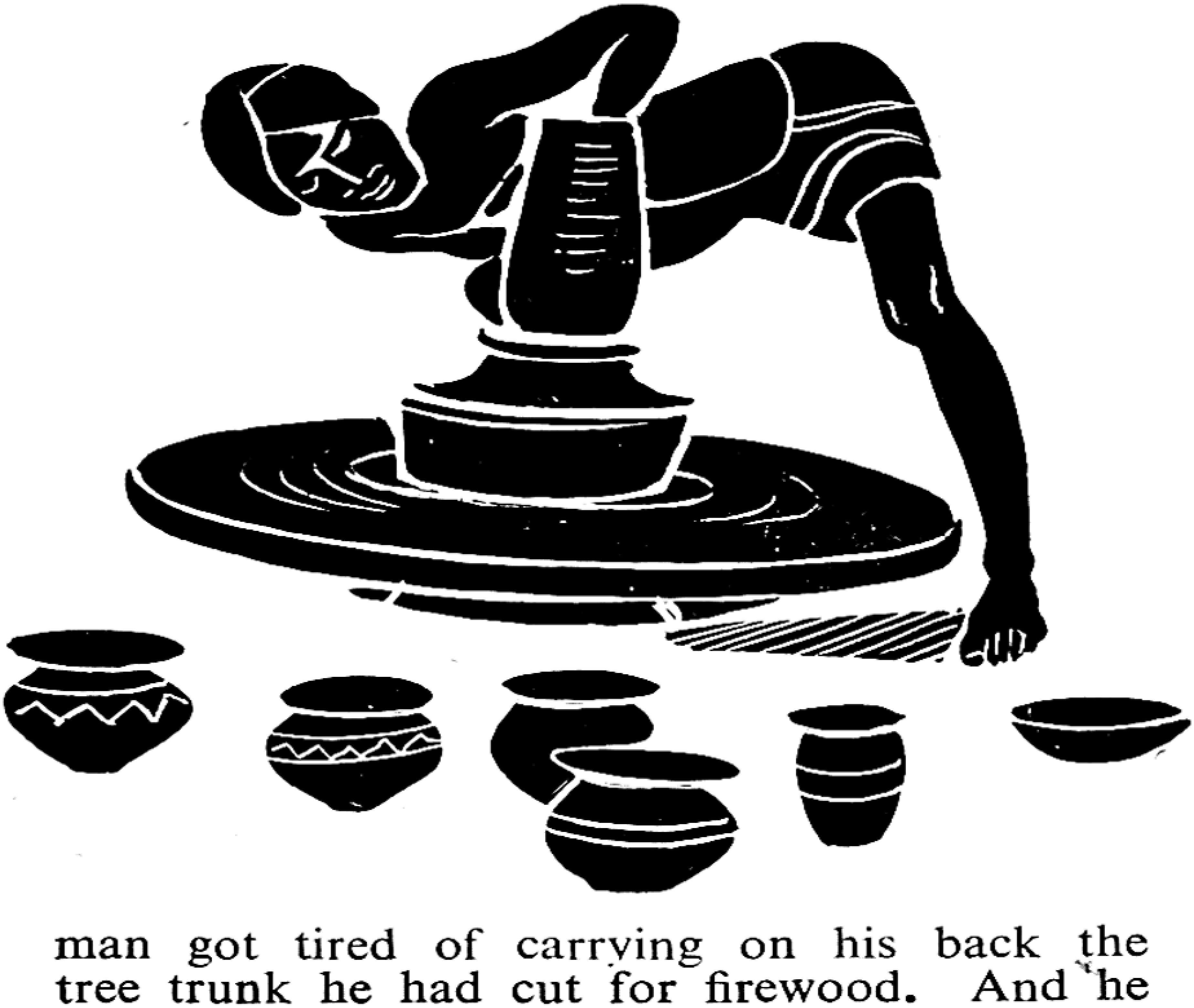
Did you know that the man who first thought of the wheel was perhaps the greatest inventor the world has ever known?

You may well ask, why I say this. How can it be that, after telling you about all the wonderful things that man has done, I say that the wheel is more important than everything else.

The reason is that man would not have gone any further, after becoming a food-gatherer, if he had not invented the wheel. The wheel has helped man to make the cups from which he drinks. The wheel has been used to revolve the well whose water irrigates the fields. The wheel makes the feet of the bullock-cart, of the railway train, of the motor car and of the aeroplane. And, it is because thousands of wheels go round in factories that we have cloth and plastic goods and fine tools to make other tools with. And all these things make our civilization.

Let us see how the wheel revolved, the wheel of life, which gives us things and moulds our thoughts and behaviour today.

As usual, we do not know exactly when and how man discovered the wheel. But we can make up a story about it. Perhaps, one day man got tired of carrying on his back the tree trunk he had cut for firewood. And he



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began to drag the tree trunk, or rather roll it down the hill. And, seeing a log rolling he got the first idea of the wheel.

Actually, however, the first real wheel seems to have been the potter's wheel. The people of Mohen-jo-daro, who lived five thousand years ago, certainly knew how to revolve this kind of a wheel. Because they have left earthen vessels of all kinds and shapes. These were surely turned on the potter's wheel. In Egypt, the potter's wheel was known even earlier. And in China, too, it was found in remote antiquity. And, what is very strange is that though it led to the making of other kinds of wheels, the potter's wheel has not changed, in thousands of years. So that when you see a potter sitting in a village, revolving his wheel and shaping clay on it with his hand, you can imagine how a potter in Mohen-jo-daro sat over his wheel. It is likely that the first potters turned the wheel with one hand, while they shaped the clay with the other. Then they learnt to turn the wheel with their feet, so that they could use both hands to shape the clay. Later, they learnt to turn the wheel by a string which is wound round the edge of the wheel, attached to another wheel turned by another person. But the skill of the earliest potters was as remarkable as that of the potters of today. At the time that man learnt to turn the potter's wheel he also learnt to cut wooden discs from the ends of the logs. These discs were joined together with a cross wheel. And thus the first wheels for the bullock-carts were made. We find that bullock-carts were used in Mohen-jo-daro, in China and in Rome.

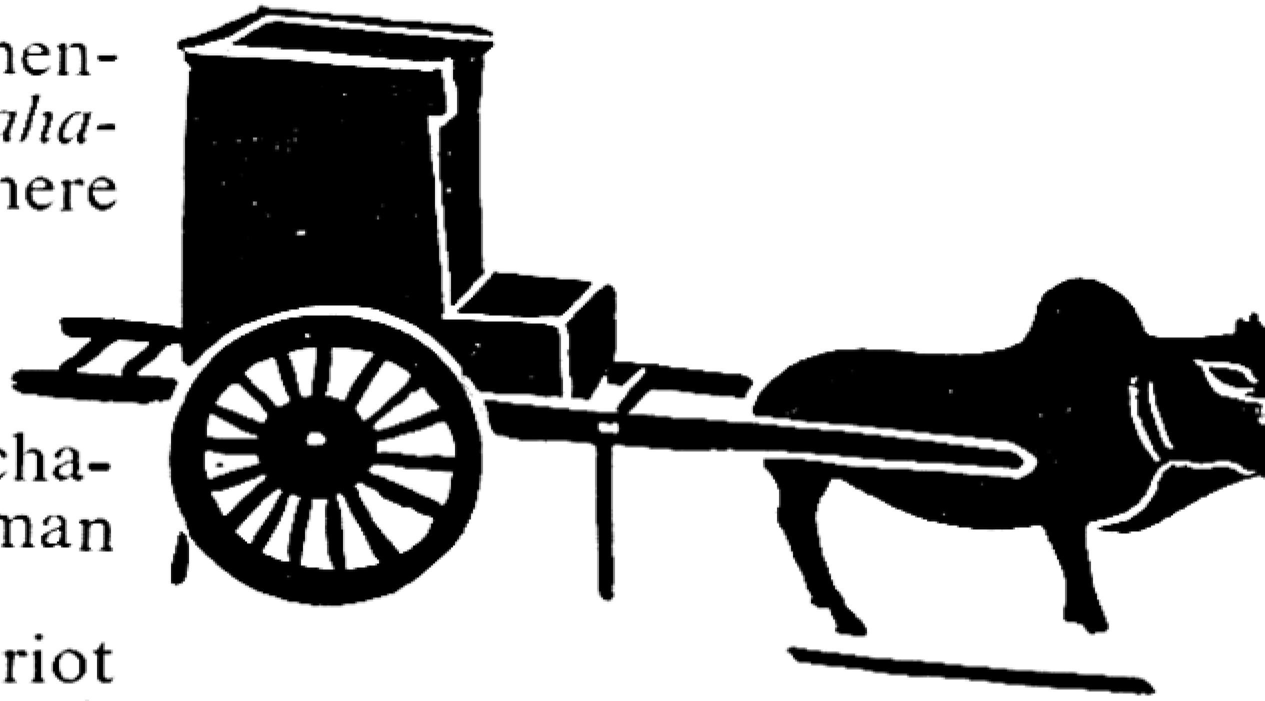
2

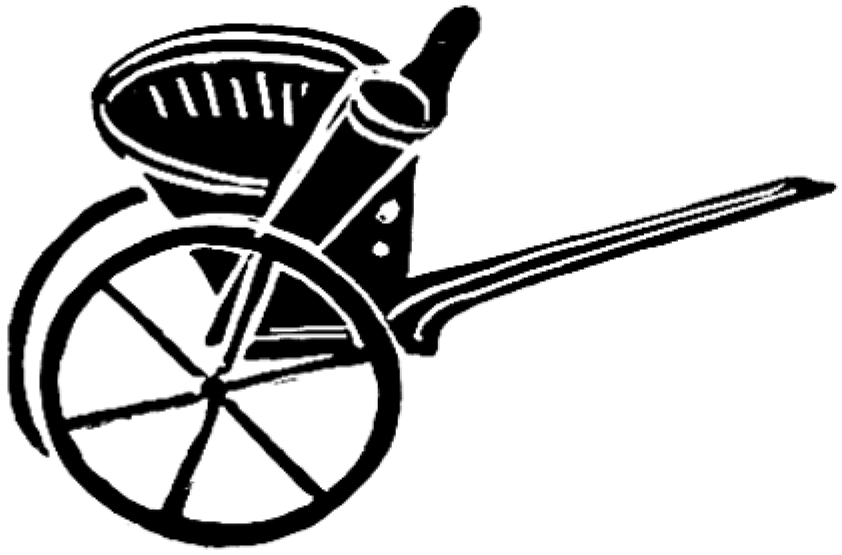
And, thousands of years ago, man also made horse-carts or chariots, which were drawn by one, two, three or even four horses.

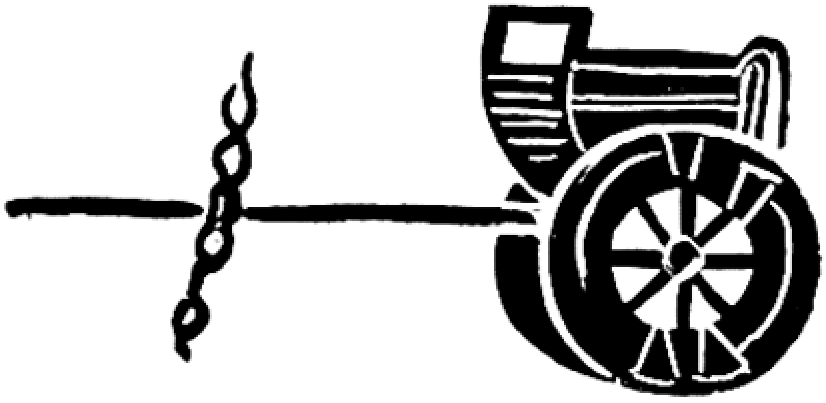
The chariot could go very fast and played an important part in the hunts on which our ancestors depended for food, and in the wars through which they fought their enemies.

Chariots are mentioned in the *Mahabharata*. And there are pictures of Egyptian and Assyrian chariots and Greek chariots and Roman chariots.

The Indian chariot or Rath, as we call it, was a heavy structure, made of beautifully carved wood. It was difficult to drive, and you may remember that no less a person than God Krishna







is said to have driven the chariot of Arjuna in the battle of Kurukshetra.

The Egyptian chariot was lighter. It had a wooden framework with a network of interlaced ropes for the floor. The wheels were far apart and tied to the axle by leather thongs. There were six spokes in war chariot and four spokes in a private one.

The Assyrian chariot was like the Indian, heavier and more elaborate. The wheels were sometimes fitted with metal tyres.

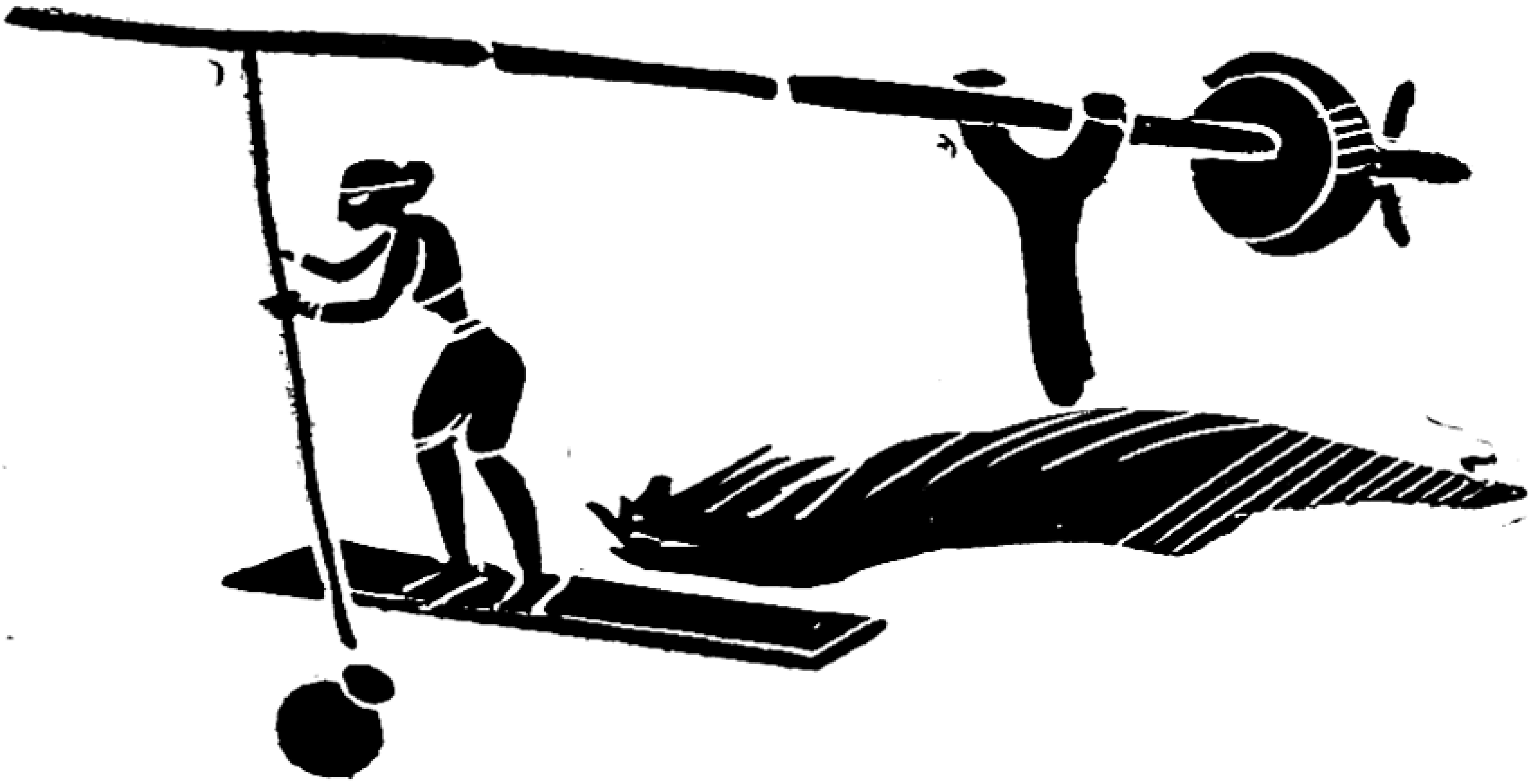
The Greek chariot was ornamented with gold and silver, and richly carved figures. The wheels were of brass and the axle was of steel. There were eight spokes for each wheel, and it could run very fast.

The Romans improved on the

Greeks and made chariots of wood, with spikes jutting from the axle to cut their way through all obstacles.

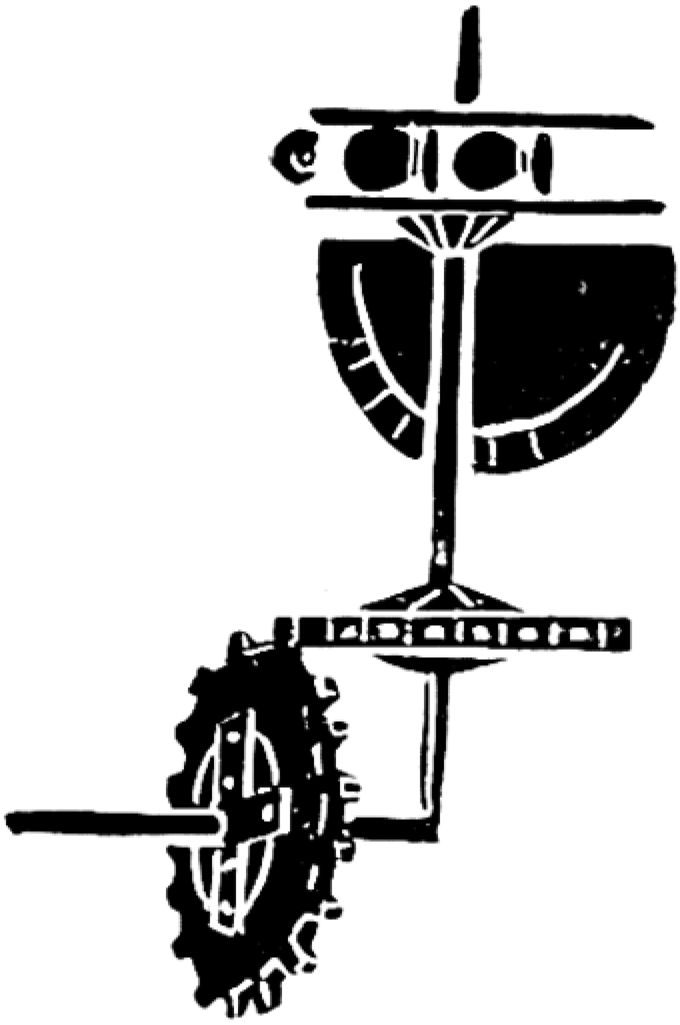
Apart from the use to which the wheel was put in war and for taking goods from one place to another, it was used early to draw water from the wells. At first man used to pull up water with a bucket made of skin with the help of a rope. This was a difficult work. For if one lost one's balance, down one went into the well.

Then an easier way of pulling water from the well was found. A bucket was tied to the end of the rope and the other end tied to a log, at the end of which was a heavy stone. Later a rounded wooden pulley was made. As the handle was revolved, the rope on it wound itself and up came the pitcher, near the platform. This kind of well is to be seen all over our country. Another way of drawing water from wells was by the Persian wheel. In this, row of small pitchers revolve round the wheel, which itself is revolved by another wheel, pulled round and



round by a couple of bullocks. The small pitchers empty themselves in gutter, as they turn upside down. And the water is carried to the field.

The wheel was also used for spinning, as in the spinning wheel which Mahatma Gandhi brought back into use in our country. An alternative use of the wheel was on the two discs called mill-stones. Women all over the world ground corn or wheat in between the discs, by revolving the handle, alone or together.



But a few centuries before Christ, man invented water-mills. In these the wheel was turned by the pressure of running water or by the wind. And the mill-stones ground the corn with this power down below. By the first century a poet of Greece sang :

"Mill girls touch the queen no more; for

Demeter hath bidden the Nymphs perform your work.
They rush on to the top of a wheel and make its axle turn.”

But the rich men still preferred to employ women to grind corn in between mill-stones rather than use the windmills or the watermills. Also, they neglected other inventions.

And when the inventions were not used the inventors and the men of science had little desire to evolve new machines. The wealth of the Egyptians and the Greeks arose from their use of machines and other devices, to water the earth and to drain the mines, even as the decay of these two civilizations came from their neglect of the machines.

3

This is an important lesson : When the rich make money by using certain machines and refuse to use new inventions because they cannot be bothered, the result is that the workers have to go on doing hard labour which the new machines could do for them. As man has been inventing tools for thousands of years to make life easier, and as he has only gone forward through these inventions, the problem of the tool, or the machine, has to be faced.

In the past, the men of money have often hindered progress, because they found that slaves and poor people could be bought cheaply to do the work of machines. The men of religion also feared, sometimes rightly, that men may begin to imitate the work of God. So they did not encourage inventions either. The Christian church even banned experiements in science.

But the inventive animal, that is man, began to experiment more and more. Especially in the period of light that has been called the Renaissance.

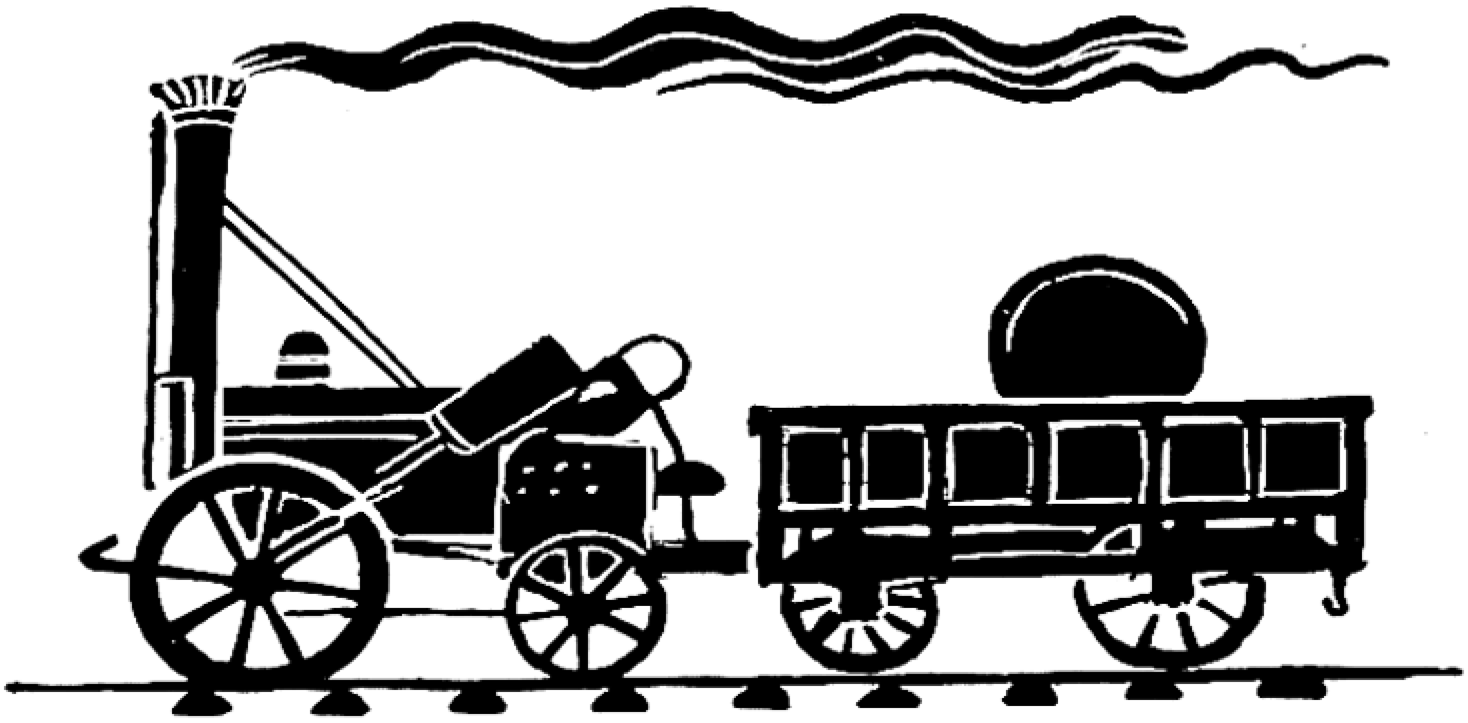
4

One of the chief experiments that occupied man was the driving of war chariots with the help of steam. From Hero, the sage of Alexandria, who lived in the first century B.C. to James Watt, the Scotsman, who lived in the eighteenth century, there was patient work done by many men to evolve the steam engine. Watt built the first of these in 1777. Immediately it proved to be of great practical value in the making of things. Because in the centuries when this 'heat engine' was evolving, the needs of men had changed, as also their interests. For instance, the English lords enclosed the land. And many farm labourers became unemployed. These people were put to work in the factories of Manchester and Bradford. Here cotton was being brought from the colonies which the English adventurers had conquered for their country, in America, India and Africa.

The needs of the industries of Lancashire led to the invention, by John Kay, of the fly-shuttle, and, by James Hargrave, of a spinning-jenny. A little later, Whitney, from America, invented the cotton-gin to separate the cotton from the seeds. Then Richard Arkwright and Edmond Cartwright invented the weaving machines, driven by water power. The engines of Watt, and the weaving machines of Arkwright were put together. And this combination has changed the history of man completely.

After the steam engine was a fact, Watt tried to design a steam locomotive. Before he could do so, however, a locomotive engine was made by Richard Irevichtik which could carry a load of twenty tons.

The story of the steam boat, which sails in the seas, is more fascinating still. A man called John Fitch, of Connecticut, made a boat which sailed in the river Delaware, in 1787. Another American, Fulton, copied Fitch's idea and tried to make submarines. He came to Paris and tried to show Napoleon how to defeat the English fleet by means of the submarine. But Napoleon did not listen to him. So Fulton went back and founded a steamship company



which ran steam boats in the water of New York State. While Fulton prospered, John Fitch who had spent all his money on making his fifth boat pulled by a screw propeller, failed. People laughed at him and Fitch killed himself. But twenty years after his death, the Savannah sailed from America to Liverpool in 25 days. Now the people stopped laughing. But they had forgotten Fitch and thought the steam-boat was invented by someone else.

About sixty years later, Stephenson, a Scotchman , built his travelling engine. Thus was founded the modern railway.

In a previous chapter we have traced the invention of electricity, from its humble beginning in the caveman's fire. This invention made possible the telegraph, the telephone and, later, the electric engine.

5

The coming of the machine, which was so beneficial to mankind, also brought its curses. The small men who made shoes, or wooden boxes, or pots, with the tools they owned, could no longer compete with the thousands of things which a machine could make in a very short time. As machines were expensive, and these craftsmen not rich, they could not buy the big machines. So they began to take jobs in big factories, run by richer men, even as the jobless field labourers had to do. Some of the craftsmen, who were unemployed, thought that the machine was an enemy and began to break up the machines. These rioters in England, called the Luddittes, were crushed. And men began to hire themselves out to the owners of big factories and accepted their lot. They made a little more money than they could before. They lived in the filth and the smoke of big towns and lost the quickness of their hands with which man has always made the best things.

The conditions of life in the factory areas were bad. So the workmen began to organise themselves into labour unions. But the employers could not tolerate these unions and got their friends in Parliament to pass laws against such organisations.

Soon, however, men were to assert themselves and demand the right to be free. Turgot, a Frenchman, who lived in the time of Louis the XVI talked of 'economic liberty', and wrote : 'Let the people do as they please.' Adam Smith, in England, also talked of liberty and of the natural rights of trade. A number of men wrote what is called the 'People's Charter' and asked for a voice in the government of the country. Naturally, the factory owners, who were influential in the government, did not want the workers to become powerful. And the Chartist movement was destroyed. The rich factory owners had won. The result was that many more goods were produced. But millions of men, who produced these goods, lived in the most awful conditions in slums.

After they conquered India, they introduced the machine into our own country. But the English did not want competition from the goods made in Indian mills. So India could not develop its industries and remained backward. And while the conditions of workers in England improved vastly, our workers still live almost as English workers lived a hundred years ago, in small hutments which are filthy and unworthy

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to house human beings.

It is clear today that the machine civilization has brought many more goods to us at cheaper prices. But it has not the happiness that men expected when factory chimneys sprang up and railways began to run and ships began to sail the seas.

Many brave men have fought for the basic rights of workers. It took a long time, for instance, to limit the hours of work in the factories. Because employers did not want this. Also, there was much argument before children of five and six were barred by law from working in the mills. In America a similar struggle was against the employment of negro slaves who were treated badly because of their colour. The rich farmers of the Southern States of America felt they could not grow their cotton without slave labour. But some of the noblemen of the North tried to abolish slavery, according to the principle laid down in the Declaration of Independence, 'that all men were to be treated free and equal'. This led to a bitter civil war be-

tween the North and the South. The campaign against slavery was led by the great American leader, Abraham Lincoln. After many difficulties, Lincoln won, and issued his 'Emancipation proclamation' in 1863, by which all slaves were set free. A few days later, he was murdered by a mad man. But his work went on.

The rights of workers in Europe were not recognised for generations in spite of the bitter struggles waged by them. Often, the struggles were led by enlightened factory owners themselves. For instance, Robert Owen, who owned many cotton mills, established a 'socialist community'. Louis Blanc, a French writer, tried to establish a 'social workshop'. Karl Marx, a philosopher, and Frederick Engles, a factory owner, tried to study the reasons why the

machine civilization had failed to bring happiness to men. Marx found that it was because the workers could be bought and sold as wage slaves by the capitalists that things were bad. So, in 1864, he organised the first international association of working men. And, in 1867, he published the first volume of his famous book, *Capital*.

He argued that the machine age had brought about a new class in society, the capitalists. They used their surplus wealth to buy tools. These are used by labourers to produce still more wealth. Thus the rich grow richer and richer, and the poor workers grow poorer and poorer. So, he advised working men of all countries to unite and struggle for rights.

The ideas of Marx and other socialists grew. So that later the Labour Party was able to form a government in England representing the workers. In Russia, during the first world war, the socialists and the communists brought about a revolution and established the new Soviet government. This is called the 'Dictatorship of the Proletariat' against the Capitalists and the big landlords.

Our age witnessed the struggle between the two modes of society, the socialist and the capitalist. Everywhere, men are thinking of how to improve the living conditions of the large number of people, who produce all the wealth with their labour. The inventions of science, like atomic energy, could give us hope if it were not being used for bombs. Because if we could use this and other energies to produce more food and more goods, the age of plenty would arrive.

But man must realise that he is the master of the machine and not its slave. Only then can he control all the evils produced by the machine and increase the sum of happiness of the whole of humanity. We must remember the wise saying of the English sage Jeremy Bentham : "The way to be comfortable is to make others comfortable. The way to make others comfortable is to appear to love them. The way to appear to love them is to love them in reality."

CHAPTER TENTH

ONCE THERE WAS A KING...

I

In the long story of man on this earth, there are many stories. Some of these stories, within the big story, have been put down here. But the most important story of how man learnt to live with other men, has been left to the last. I did this because I believe that if we learn the lessons of this story, we may survive. Otherwise we shall surely perish.

We have seen how our earliest ancestors were hardly better than the animals, living in the darkness of the jungle. We do not know how man survived against all the dangers which surrounded him. But, in the growth of his body from the ape-like man to the human being, we can see those qualities which enabled him to become what he is today.

In a world where we do not know very much, we can be only sure of a very few things. One of these is : Progress is real, even if it is not like walking on a straight road. In fact, history is not a straight road. It gets lost in many jungles and marshes. And then it reappears in a kind of zig-zag. All the time, however, this road is ascending towards high hills. The upward curve breaks into troughs and then rises into certain crests. For, each hill reveals a higher one on the horizon.

In the light of this truth we can see the change that came when, from being food-gatherers, the ancient men settled down in clusters of huts and began to grow food on the nearby earth.

And with this physical change, we can also see the mental change in man's attitude to other men. Whereas all other men may have seemed like enemies, while either competing with other men in the hunting of animals or in the gathering of food, now they seemed like friends. Because they grew the harvest together.

2

In all the old civilizations of India, Egypt, Babylon and China, where men began to live in little villages, they told each other about their troubles and shared each other's joys. Also, in very early times, they began to help each other. Some grew the grain. Others made the pots, or wove the cloth, or cut wood into shape, or prayed to the gods on behalf of their own village. The peasants, who grew food, gave some to the weavers for the cloth they took from them. They also gave some to the

carpenter, who mended their ploughs. And they gave offerings to the priest for the gods. They had plenty of land. And men worked hard and there was little or no difficulty about sharing the produce of the earth.

Later, when the rains did not come, or the wild beasts attacked them, they had to move away to other lands, which were not so fruitful. And, perhaps, there were difficulties about who should have the good land and who should have the not-so-good land. Then they seem to have got together and elected the eldest and the wisest men of the village, to decide this and other questions. In our country there was a custom, in ancient times, to elect five elders. And this formed the Panchayat.

The Panchayat decided every dispute. If a family had not enough land, then the Panchayat

gave it more land. If the potter was lazy and did not give pitchers to any particular peasant, then the Panchayat told him to get to work and do the needful. As no one owned the land or the grazing grounds, and everyone had *rights* to the land, everyone's *rights* were respected. Apart from seeing to it that these *rights* were respected, the Panchayat looked after the supply of water to the fields, and maintained the tracks of dusty paths in good repair.

3

Then the sleepy little village was suddenly disturbed one day by a host of other ferocious men, who came on their horses, driving herds of cattle. They raised much dust and made much noise. And they talked in a strange language, which the villagers could not understand. From their wild gestures it seemed that they were up to no good. They wanted to fight the villagers if the peasants did not leave the fertile earth and go further away.

At the head of this band of horsemen was a man who looked stronger than the others. He was the chief. His will prevailed. The five elders of the village and the simple, peaceful people had no such weapons to fight the invaders with as the invaders had. The village surrendered. And the chief and the horsemen took control. That is how the first kings came to be.

These little chiefs, or kings, ruled one village or two villages, or a hundred villages, according to the strength of their own bodies, or of their soldiers. Sheer physical strength, or brute force, was all that was necessary. If the king had a powerful wrestler, who could be sent to bully other villages, then the king annexed more land. And thus he became strong and organised a court, chose officials who had to carry out his orders. He gathered grain from the people of his small kingdom. And, he trained an army. Then if he felt himself more powerful than the neighbouring kings, he challenged them to a fight by sending the 'Asvamedha' horse, to the territory of the other kings. If the horse was arrested and the challenge taken up by another king then the armies of the two kings fought each other. The army which could kill more opponents and destroy the enemy's weapons, won the battle. And its king annexed the territory of the other king. And in this way the king, with the big army, subdued many smaller and weaker kings. And he became the king of kings, or what is called the Emperor.

For thousands of years our country saw these kings come and go. But the form of government which they brought about remained more or less the same as it was in the village republics. Because, when kings conquered the village republics they did not begin to *own* the land. They too had certain *rights* on the land. For instance, they collected a share of the grain from each peasant for their treasuries. And they took grass for their horses from grazing land and reserved some forests for the hunting. In exchange, they protected the villagers against wild beasts, and other enemies, with the help of their army, fed on the grain which they collected from the villagers. They looked after the wells and ditches and had the tracks repaired. Their contact with the villagers was seldom direct, but through the rent collector. This man went round taking the king's share of grain after every harvest. And, having collected this tax, he loaded the camels and took it to the big village or the town. The king had built a house here, surrounded by high walls, called the fort. The rent collector also brought news of the villages in the kingdom. And, perhaps, some villagers who had complaints to make, came with him. He presented them to the king, who sat on a throne surrounded by his best soldiers and wise men, called courtiers. The king listened to the stories of these men. And, in consultation with his courtiers, he decided what should be done in each case. Perhaps, the men who had wronged the complainant had to be fetched. So the soldiers went off, arrested him and brought him before the monarch. Then, both the complainant and the wrong-doer were given a chance to say their say. After this the king decided the issue, either according to his own judgment, or with the help of the courtiers.

You will be surprised to know that this simple and essential kind of order prevailed in India right until the eighteenth century, and even until a few years ago in the Indian States, where the Rajas and Maharajas ruled.

The king, or the emperor, was all-powerful. Because he had an army and police force, and courtiers and servants. If another all-powerful king pushed him away from his throne with a bigger army, then the power went to the new emperor. Power was the important thing—the power of the army and the police, with their deadly weapons. As the Punjabis say : "He who has a stick has the buffalo."

4

The European invaders who began to come in the fifteenth, sixteenth and seventeenth centuries, also had kings in their own countries. And, when the British conquered India, the king of England became the Emperor of India. The idea of power, or the big stick, prevailed.

But, with the coming of the British, we got to know certain things which had happened in Europe, and which were changing the whole idea of the power state.

In Great Britain, the idea of kingship arose, as it arose everywhere else, through invasion. And the king appointed his best soldiers and noblemen as his courtiers.

The only difference between the Indian kings and the English kings was that, while the Indian kings had only certain *rights* to land (to collect revenue in exchange for protection of the villagers with their armies), the English kings *owned* the land, because of their Divine Rights, as representatives of God on earth. And when they gave land to their courtiers, these noblemen also *owned* the land. And the villagers worked as tenants on their estates.

After a while, the noblemen called barons, who owned big pieces of land became very powerful. And, in the time of King John, these lords got together and obtained from him what is called the *Magna Carta*. This paper limited the king's power and gave a strong voice to the nobles in the government of the country.

Later, in English history, the sons of the Barons of King John's time got together again and limited the King's power still more. All this time, the tenants just worked as serfs.

Later still, the younger lords and the merchants revolted even against the idea of the Divine Rights of the King and formed a republic of their own, under Oliver Cromwell. Of course the older barons brought a descendant of the English dynasty back to power. And England began to have kings again. But the assembly, called parliament, in which the representatives of the merchants sat, continued. And the power of the king continued to be limited.

The hold of the merchants over parliament was weakened further. Intelligent men, who learnt something from the history of Greece and Rome, and from the events on the Continent of Europe, wrote brave thoughts against the backward rich people.

5

The biggest of these events was the French Revolution.

In England the 'Divine right of Kings' had given place to the 'Rights of Parliament', through the Cromwellian Revolution. But in France, the king still retained the Divine Right as he had always done. The French kings were able to stay in power by making the other kings of Europe quarrel with each other. And they allowed the merchants to make money and helped them to trade with far-off countries.

Many small merchants and poor peasants from Europe, especially from England, had gone to live in the newly discovered continent of America. But this country was ruled by the British kings. The men of this new country did not like the oppressive rule of the British kings. So they went on protesting. And, at the end of the eighteenth century, they revolted against the British and formed their own Republic. The Declaration of American Independence, which was based on the respect for each man and his rights, filled the whole world with hope.

6

About the same time, in France intelligent men, like Voltaire and Montesqieu were saying that all men ought to be free. They were against religious political tyranny. Rousseau, a Swiss, wrote that man was happier in the old primitive society. And he attacked the idea of kingship. Diedrot, D'alembert, Turgot and other writers began to write an encyclopaedia which would contain all the new ideas, and the new science and the new knowledge. The people of France were jubiliant at such things. And the flames of the new ideas spread all over France. And there was much unrest. Attempts were first made between 1789 and 1791 to limit the rights of the king. But these failed. Then, during the next seven years, a Republic was established, with an elected democratic form of government. The king tried to save his position by various means, because the treasury was empty, and the country heavily in debt. The people would not pay any new taxes. Their slogan was 'no taxation without representation'. Thus the people of France began to feel stronger. But the King would not surrender his absolute power. Then Louis Sixteenth and his queen began to show fight. The people of Paris stormed the Bastille prison to break the king's autocratic power.

The National Assembly met on the 4th of August. It resolved to abolish all the privileges of kingship. On the 27th of August was published the Declaration of the Rights of Man, which was printed before the French Constitution.

The King tried to intrigue with his friends in the other capitals of Europe to help him.

In September, 1791, the first constitution of France was accepted in the National Assembly. On the 1st of October, 1791, the elected Legislative Assembly gathered.

Now, the King of Prussia and the Emperor or Austria tried to help Louis, and sent an army to invade France and deliver him.

The people of Paris stormed the King's palace in the gardens of Tuileries. The King's guards were murdered to the last man. But the King escaped through the meeting hall of the assembly. Here he was suspended from his position and was taken prisoner.

The armies of Austria and Russia kept advancing towards France. The people of France were furious. And the National Convention, which met on September 21, 1792, condemned the King of high treason and found him guilty by 361 to 360 votes. On 21st January, 1793, Louis was marched off to the guillotine.

The extreme elements, called the 'Jacobians', turned against the moderates called the 'Girondists'. And many 'Girondists' were condemned to death or committed suicide.

In October 1793, the Jacobians suspended the Constitution. And the small Committee of Public Safety, led by the revolutionaries, Danton and Robespierre, as its leaders, assumed all power. This committee abolished Christian religion and the old calendar. But now came a regime of terror in which 70-80 people were killed every day, whether they were good or bad.

The members of the National Convention at last turned against Robespierre, and took him to the guillotine. On 27th of July 1794, the reign of terror ceased and Paris rejoiced.

The unstable position of France made it necessary that the country be ruled by a few strong men until the enemies of the Revolution could be defeated. So, while the French armies fought against the foreigners for four years, France was ruled by five directors. Later the power was vested in a young General called Napoleon Bonaparte, who became the first Consul of France in 1799.

7

During the next fifteen years, Napoleon, who was a genius of war, strengthened the French army. Then he formed the ambition to unite all countries of Europe under one rule.

Between 1789 and 1804, Napoleon remained more or less loyal to the ideas of the French Revolution. 'Liberty, Fraternity and Equality' were the battle cries of his armies. In the year 1804, however, he had crowned himself Emperor of France. And then he forgot his earlier love for the poor and the oppressed and went to conquer other people's lands.

He wanted to invade India via Egypt. But the British navy made him retreat from the Nile. Again, the English admiral, Nelson, broke Napoleon's fleet at Cape Trafalgar, on the South-West coast of Spain. Napoleon could have saved himself, if his ambition had not blinded him. But having defeated the smaller European countries he attacked Russia. He gathered all his armies and marched to Moscow. He captured the Kremlin Palace. But Moscow caught fire on the night of September 15, 1812. And Napoleon ordered his armies to retreat.

The Russians now got the chance to attack his Grand Army. Except for a few survivors, Napoleon's whole army was destroyed. The people of Europe now began to hate Napoleon.

Defeated by the Russian Army he returned to Paris. He was exiled to the Island of Elba in the Mediterranean. And his small son was put on the throne. But the powers, which were ranged against him, put Louis Eighteenth, the brother of Louis Sixteenth, on the throne, instead of Napoleon's son.

This new king was foolish and indolent.

On the 1st of March, 1815, Napoleon landed in the South of France. Louis's army deserted and Napoleon marched to Paris and took control.

Now he tried to make peace with his enemies. But they were determined to destroy him. In June, 1815, he marched to Belgium and defeated the Germans under General Blucher. His own Generals, however, forgot to destroy the beaten army. Two days later, Napolean had to fight the English Duke of Wellington. He seemed to be winning. Suddenly, Blucher returned with his horsemen and spread confusion in the French army. Thus came the end of this ambitious leader of France. He tried to secure good treatment from his enemies. But he was exiled to the Island of St. Helena, where he died six years later.

Before his death he claimed that he had always been the friend of those principles of the Revolution, "Liberty, Fraternity and Equality".

While Napoleon was in exile, his victors tried to undo all the good ideas of the French Revolution. And they sought to preserve peace by suppressing all new ideas. Soon the prisons of Europe were full of those who believed that the people have a right to govern themselves.

8

But the love of freedom in each nation began to assert itself.

In South America, independent Republics were established against the Spanish kings, who ruled these vast territories, since Columbus discovered this continent. The great powers of Europe, Austria, Britain and Russia, were unable to check these developments. Everywhere there was a new ferment. And the nations of Europe, as we know them, emerged into their present shapes. The ideas of the English revolution from which Parliament emerged, had gone to most men's minds. So had the Declaration of American Independence impressed people. And the slogans of the French Revolutions became very popular. Thus the nineteenth century closed on a note of hope. The authority of Kings was more or less limited. And Parliament or Legislatures really ruled.

9

The merchants and politicians who composed these assemblies were, of course, not very keen to apply the ideas of democracy, the rule of the people by the people for the people, in the colonies and possessions they had secured in Asia, Africa and other parts of the world. Because here they sold the goods they manufactured in their own countries, and from there they took cotton and jute and rubber and tin and other raw materials.

Of all nations, the British had an earlier start. They built up a far-flung Empire, of which India was a part. They had defeated the Dutch, the Portuguese and the French. Still these nations continued to have small colonies all over the world.

The nation which had no colonies was Germany. This country had united late and had not been able to assert itself against the British. Meanwhile, it had adopted the machine and was producing a large number of goods. As these could not all be consumed at home, the

German rulers always longed for outside markets and colonies.

The colonies themselves were awakening. In our own country, India, a great national struggle arose. And some of the best minds of our country longed for freedom and went to jail in defiance of British rule. The ideas of of these great men, Tilak, Lajpatrai, Mahatma Gandhi, Motilal Nehru, C. R. Das, and Jawaharlal Nehru, filled the hearts and minds of our people.

But, in Europe, the powers were oblivious of our desire for freedom. They were still greedy and prepared to fight each other.

In 1914, the German Kaiser attacked Belgium. And the First World War began. British, France, Russia and other European major and minor powers were on one side, and

Germany was on the other. After four years of terrible death and destruction, the Allies won and signed a peace treaty at Versailles.

During the war, the Russian Socialists and Communists under Lenin revolted against the oppression of their king, called the Czar. And they formed the new Socialist Soviet Republics of Russia.

Unfortunately, Germany was deliberately humbled. And it was not allowed to grow up as a peaceful state by the heavy damages it had to pay to the Allies.

The League of Nations, which the Allies formed, soon became the tool of the four or five big powers for keeping small and big nations down. And the U. S. S. R. was not even admitted to the League for some time.

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The rich men of Germany spoke bitterly against the Versailles treaty. And they secured the help of an ex-corporal in the army, Hitler, to press their claims.

Hitler had taken many ideas from Mussolini. This Italian journalist had established the rule of the rich men in Italy with a strong police and an army against the wishes of the ordinary people. And Hitler was to outdo his teacher, in making speeches and spitting fire.

The bad people in Britain, France, Spain, and elsewhere, also helped Hitler, because they wanted him to fight Russia and destroy the new Communist state, which was fast growing up into a modern nation. The Imperialists also encouraged the Japanese rich men and warmongers to attack China, where the Emperor had been overthrown and a Republic under Dr. Sun-Yat-Sen established.

Adolf Hitler organised the German army and navy and equipped a strong air force. He made an alliance with Mussolini, and Japanese Fascists and militarists. In September 1939, he attacked Poland, because the Poles would not give him their harbour, Danzig. And the Second World War started.

This giant world-wide struggle lasted for seven years. And it was even more terrible than the First World War.

The nations which became allied in the course of this war were Britain, France, America, Russia and China.

After much travail, Hitler and Mussolini and the Japanese military were defeated. And the world emerged much scarred and bruised from this struggle.

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President Roosevelt of the U.S.A., and Churchill of Britain, had issued a declaration that the second war was being fought to preserve freedom all over the world. This was called the Atlantic Charter. Mahatma Gandhi had challenged the British Government to apply the ideas of the Atlantic Charter to India and the colonies of the Western nations. For here, in our country, in Indonesia, Burma and Ceylon, Malaya etc. the British were doing almost the same things as Hitler and Mussolini did in Germany and Italy. The British Government answered this challenge by putting all the foremost leaders, including Gandhi and Nehru, into jail.

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After the war the Indian people would not rest and they wanted freedom for their country. So the British were forced to leave India.

They did this, however, after separating India and Pakistan, on the basis of their policy of divide and rule. But now, since August 1947, we have become masters in our own house. And we are trying to practise the ideas of peace and goodwill among men, which we have inherited from our glorious past.

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Unhappily, the great powers, who formed the United Nations Organisation after the war to preserve peace in the world, have already begun a 'cold war' of words and threats and are angrily gnashing their teeth at each other.

The slogans of the 'cold war' prevent many people from seeing that the real enemy of good government is the hunger and misery of many people of the world. Also the idea of containing communism by force of arms, which some Western nations are pursuing, prevents the freedom urge of several Asian and African colonial people from expressing themsleves.

Our people are pledged to be neutral in this 'cold war'. And our Prime Minister has struggled constantly to try and bring all the big powers together, so that their differences can be discussed, and the 'temper of peace' created in the world. We, in India, can have no hope of giving food and houses and clothes and good government to our people, without long eras of peace.

The darkness which overshadows the world has to be scattered. Man has come so far. He cannot let himself be destroyed by the Atom and the Hydrogen bombs. He can, and must, build a better world.

May the words of this book bring some light and help to dispel the gloom. And may the light of these words mingle with the light in your eyes. For your bright, eager eyes are the symbol of all our hopes for the future.